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VIRUSES *

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Many of our most common diseases, measles, chickenpox, herpes febrilis and vaccinia, are caused by filtrable viruses. It is desirable that workers who are not actively investigating such disorders, as well as those who are so engaged, become familiar with this type of disease-producing agent. Therefore, through the medium of some general remarks followed by descriptions of specific work conducted in various laboratories, I shall attempt to engender a greater appreciation of the problems encountered in this field of research.

VIRUSES IN GENERAL

What are filtrable viruses?[1] Innumerable answers to this question have been proposed, but not one as yet has been generally accepted. The unsettled state of affairs in this realm of research extends even to the spelling of words employed in connection with the work. For instance, both filterable and filtrable are used; virae, vira and viruses are employed for the plural of virus (there is no plural for the Latin word *virus*); and virucidal, viricidal and virulicidal are used to describe a certain property of antiviral serums, viz., the capacity of inhibiting the action of viruses.

The term filtrable virus literally means a noxious agent or poison capable of passing or susceptible of being passed through a filter. By usage it came to indicate certain disease-inciting agents capable of passing through diatomaceous-earth and kaolin filters that hold back ordinary bacteria. After a time, however, it was found that some very small bacteria and spirochetes also penetrate such filters, and not a few diseases, because of their characteristics, have been placed in the filtrable virus group, even though their incitants are not filtrable or are filtrable with the greatest difficulty. Moreover, filters of plaster of paris have recently been shown to allow the passage of ordinary bacteria while restraining the filtrable viruses. Under these conditions the order of affairs is reversed. Thus, the term filtrable viruses is misleading and confusing. Yet through wide usage and by general consent it now designates a group of active transmissible agents that produce a large number of diseases attacking individuals in practically every realm of plant and animal life, e. g., bacteriophagy, mosaic diseases of plants, polyhedral diseases of insects, rabies, distemper of dogs, cowpox, foot and mouth disease of cattle, pernicious anemia of horses, fowl plague, Rous sarcoma of chickens, herpes febrilis, smallpox, measles and poliomyelitis.

Since many of these diseases are exceedingly common, one naturally asks the question, Wherein are they so peculiar that their incitants must be referred to in a noncommittal way as filtrable viruses? At least one of the reasons lies in the fact that no one has conclusively shown that these active agents are capable of multiplication in a medium devoid of living host cells. Hence, they appear to be obligate parasites, or in some way to be associated more intimately with host cells than are ordinary pathogenic bacteria. Furthermore, no one has yet brought evidence sufficient to convince many workers that the viruses, by means of the microscope, have been seen or recognized in highly infectious material, and also there are indications that at least some of the viruses are of such small size as not to permit of measurement by optical instruments. Indeed, Beijerinck, in 1898, spoke of the etiologic agent of tobacco mosaic as a contagium vivum fluidum. Moreover, some investigators have expressed the belief that certain viruses are inanimate. For example, in 1902, Woods asserted that the causal agent of tobacco mosaic is an enzyme, and Sanfelice, in 1914, reported that the incitant of the contagious epithelioma of chickens, or fowlpox, is an inanimate poison, nucleoprotein in character, capable of injuring normal cells in such a manner that they elaborate a poison of a similar nature which in turn attacks other normal cells. Thus a hypothesis was presented to explain how an inanimate substance may multiply and indefinitely reproduce itself in series. Similar hypotheses regarding the nature of the bacteriophage and the agent inducing Rous sarcoma have been proposed by various workers in recent years.

If the filtrable viruses continue to resist cultivation on simple mediums in the absence of living tissue, and if they are invisible or of such a nature as not to be recognizable through the sense of sight, how, then, is one to increase one's knowledge concerning this group of disease-producing agents? At present their existence cannot be determined, nor can their identification be established in any manner other than by the evidences of their activity exhibited in some host. Consequently, a study of viruses must be conducted in the host, in the tissues of the host, or in emulsions and filtrates of the tissues. To find suitable hosts, however, is not always easy, and frequently viruses do not produce exactly the same disease picture in different species of hosts. Furthermore, it must be remembered that most hosts are subject to natural virus diseases of their own, which, if accidentally encountered, may lead to confusion and errors.

From the facts stated, it is evident that workers dealing with viruses are confronted with technical difficulties not encountered in the study of ordinary bacteria that can be seen and grown on artificial mediums. For the study, however, of these peculiar incitants of disease, investigators are not without facilities for pro-

* Read before the Medical Society of Rochester, N. Y.

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1. Throughout this paper the terms filtrable viruses and viruses will be used interchangeably.

curing large amounts of them. In fact, suitable hosts, or some of their anatomic parts, e. g., brain, testicle, eye or skin may be considered living test tubes in which the viruses multiply and leave characteristic evidences of their activity. Frequently 0.2 cc. of infected tissues that have been emulsified and then diluted ten million times contains sufficient virus to produce disease when it is injected into a susceptible host. Cultures in vitro of susceptible tissues also have been found to provide a medium suitable for the multiplication of viruses.

Although the emulsions of infected organs contain large amounts of virus, they should not be looked on as consisting of virus alone, because the protein of the animal or plant tissues represents the major portion of such preparations. In the past, by means of filtration and repeated precipitation, many attempts have been made to obtain the virus of tobacco mosaic, the bacteriophage, the virus of fowlpox, the virus of Rous sarcoma, and others in a state of purity. Thus far such experiments have not been entirely successful. There is every reason, however, to believe that in the future much valuable information concerning the nature of these active agents will be derived from this type of investigation.

In spite of the fact that viruses are still obtainable in a state of only relative purity, much can be accomplished with the materials at hand. Prevention of a virus disease does not necessarily depend on the visibility of its etiologic agent or on a complete knowledge of the properties of the agent. Jenner, more than a century ago, without being able to see or to cultivate on artificial mediums the incitant of smallpox, gave a method of preventing the disease. Nearly a hundred years later, still before the filtrable virus group of diseases was recognized, Pasteur, also without being able to see or to cultivate the causal agent of rabies, demonstrated how to combat this malady by means of suitable preparations of the spinal cords of rabbits containing rabic virus.

In 1892, the filtrable nature of the virus of tobacco mosaic was discovered. In 1898, this fact was rediscovered and the filtrability of the virus of foot and mouth disease was also disclosed. In rapid succession numerous disease-producing agents were placed by various workers in the virus group and, at present, for one reason or another, more than seventy are included. In attempts to control these diseases, the principle of prevention by vaccines prepared from modified or attenuated viruses in infected tissues for a long time was not adhered to vigorously enough. Then came a period of intensive efforts to cultivate viruses on artificial mediums, with the result that many kinds of organisms have been described as the cause of each of the virus diseases. Considerable doubt exists in regard to the relation of such organisms to these maladies. Certainly none of the vaccines made from any of them have been shown to be efficacious in their prevention. The fundamental character of Jenner's and Pasteur's work is being more fully appreciated, and now vaccines are being made from suitable infected tissues. Success with these vaccines, particularly in England, has been reported by workers dealing with foot and mouth disease, distemper of dogs and fowl plague. As new knowledge is gained regarding the proper methods of collecting, purifying, modifying, cultivating and preserving viruses, progress will be made in the control of many of these diseases.

VIRUS III

Some of the difficulties encountered in the investigation of viruses and the diseases caused by them can be emphasized well by a description of some of my work that resulted in the discovery of a new disease-inciting agent, virus III. Although the facts to be presented have been reported previously, they appeared at different times in a rather disconnected manner over a period of five years, and a brief orderly account of them now will not constitute a serious repetition.

For reasons that need not be discussed here, I undertook in 1922 the study of chickenpox. The first experiments consisted of attempts to establish the disease in Indian monkeys. These animals were found to be unsatisfactory. Then, as a number of workers had previously shown that rabbit testicles were suitable organs for the multiplication of certain viruses, I decided to inoculate infectious material from patients with varicella into these organs and to make successive testicular passages in the hope of adapting the virus to this host and of obtaining eventually a concentrated virus from which a vaccine might be prepared for the prevention of chickenpox in human beings.

As has been indicated, blood from patients having chickenpox was injected into the testicles of rabbits, and eight testicular passages were made at four-day intervals. Experiments were made in eleven series of animals. In five of the eleven series, between the fourth and eighth passages, inoculated rabbits began to have fever ranging from 104 to 107 F., and to show a hemorrhagic reaction in the testicles. When small amounts of testicular emulsions from animals evincing these reactions were injected into the shaved skin or dropped on the scarified cornea of a susceptible rabbit, definite and characteristic changes occurred that were not observed in the controls. The emulsions did not contain ordinary bacteria; emulsions of normal testicles did not cause the reactions; virus heated at 56 C. for fifteen minutes was innocuous; cells affected by the active agent contained typical acidophilic nuclear inclusions; the virus passed through filters; rabbits that had recovered from the disease were refractory to reinfection, and their serum mixed with the virus inhibited its action. The manner in which the testicular material acted, as well as the lesions produced by it, particularly those observed within nuclei of affected cells, led to the belief that the active agent in the emulsions probably was the virus of varicella which had been established in rabbits.

When, by means of the usual tests, attempts were made to demonstrate a relationship between the rabbit virus and the virus of chickenpox as it occurs in human beings, it was found that the two active agents were not immunologically related. Soon it was also noted that a few "normal" stock rabbits, as well as animals that had recovered from the experimental disease, were refractory to the action of the testicular virus and that their serum neutralized its effect. At about this time, Miller, Andrewes and Swift, who, in the study of rheumatic fever, were also using the technic of repeated testicular passages in rabbits, encountered an active agent that was considered a filtrable virus. Its activity gave rise to reactions and lesions in rabbits similar to those produced by the agent with which I was working, and, on further comparison of the two viruses, their identity became evident.

When it was realized that I was not working with chickenpox virus, that Swift and his co-workers were

not dealing with the virus of rheumatic fever, and that both groups of investigators were handling the same virus, I at first thought that in some manner, through the manipulation of the testicular emulsions, a new disease process had been initiated. Consequently, Tillett and I conducted a number of experiments in which repeated testicular passages were made in rats and guinea-pigs. Only negative results, however, were obtained. Furthermore, different species of animals, including man (volunteers), were inoculated in various ways with active testicular emulsions, but none except the rabbit were found susceptible. Thus, the virus was shown to be highly specific for rabbits. In view of the facts thus far obtained, the most likely explanation of the results described seemed to be that in making repeated testicular passages in rabbits a hitherto unknown virus had been encountered in apparently normal animals. To test the validity of this explanation, Andrewes, Miller and Swift, using for initial injections blood and testicular emulsions from "normal" stock rabbits instead of material from patients with rheumatic fever and chickenpox, made repeated testicular passages in rabbits similar to those previously described. After the usual number of passages, they again encountered several strains of a virus similar to the ones previously obtained during the investigations of varicella and rheumatic fever.

The neoplasm of Brown and Pearce arose in the scrotum of a rabbit experimentally inoculated with spirochetes and is propagated in rabbits by means of monthly intratesticular inoculations. It is composed of the kind of cells shown to be susceptible to the action of my virus III. Consequently, it occurred to me that the tumor might be an excellent medium in which to study the activity of this agent. In collaboration with Dr. Pearce, I undertook, in the fall of 1924, experiments to ascertain whether virus III was cytolytic or cytotoxic for the tumor cells. Early in the study, the new growth was found to be spontaneously infected with the virus. As the neoplasm has been transferred at monthly intervals over a period of several years, a determination of the date of infection was impossible. We were able, however, to show that the virus was always in the tumor and that it was regularly transferred with it. Furthermore, all the tumor animals became refractory to infection with the virus and their serums developed the power of inhibiting its activity. We were able also to obtain a virus-free strain of the tumor, and animals inoculated with this material, although they developed typical malignant growths, were not refractory to infection with the virus. At various times during the last four years, Dr. Pearce has had occasion to test rabbits carrying the stock strain of the neoplasm and has always found them immune to virus III.

From the time of the discovery of virus III, early in 1923, until September, 1926, when emulsions of tissues containing the active agent were frozen, desiccated, sealed in tubes and stored on ice, approximately 300 testicular passages were made at intervals of three or four days. In January, 1928, the dried virus was removed from the icebox and testicular passages were resumed. In the course of some experiments, intracerebral inoculations with the virus were made in rabbits, and clinical signs of encephalitis, followed by death in many instances, were observed. A histologic study of the brains disclosed a meningo-encephalitis, perivascular infiltration of cells, and a marked degeneration of cells in the cerebrum, cerebellum and upper part of the cord. Many of the involved cells contained typical nuclear inclusions. These observations were unexpected, because shortly after the discovery of the virus intracerebral inoculations of material containing it did not produce in rabbits any symptoms other than a high fever. By means of the proper tests, it has been demonstrated that virus III has not become contaminated with any other known virus; yet one is unable to explain why it now kills rabbits, when originally it did not. In any event, another filtrable active agent has been added to the long list of viruses capable of producing an inflammation of the brain.

Although a new virus that causes a definite experimental disease has been discovered, the spontaneous infection in rabbits has not been recognized. Therefore, no name other than virus III has as yet been given this active agent. The term is used merely for convenience and designates the third strain of the virus encountered with which most of the work happens to have been conducted.

The experiences incident to the discovery of virus III, and the results of subsequent work on this active agent, emphasize the likely existence of many viruses that are at present unknown; the dangers of making mistakes in working with viruses; the necessity of exercising extreme caution in interpreting results of experiments in this field of research; and the possibility of picking up a virus from the tissues or organs of animals that are, in spite of their normal appearance, carriers of disease-producing agents. This possibility is further emphasized by the work of Cole and Kuttner, who recently demonstrated that approximately 85 per cent of "normal" adult guinea-pigs carry in their submaxillary salivary glands a filtrable virus capable of causing a fatal encephalitis in young guinea-pigs.

ENCEPHALITIS AS A COMPLICATION OR SEQUEL OF VIRUS DISEASES

Encephalitis, myelitis, encephalomyelitis, meningo-encephalitis and meningo-encephalomyelitis are terms frequently encountered in the literature dealing with virus diseases. In fact, the predominant, if not the only, symptoms and signs of many diseases occurring under natural conditions are attributable to a direct injury of the nervous system induced by the activity of certain viruses. Such is the case in poliomyelitis, Australian-X disease, rabies, distemper of dogs, and Borna disease of horses. There are other maladies, such as herpes febrilis, virus III infections in rabbits, salivary gland disease of guinea-pigs, and vaccinia, the incitants of which under natural conditions do not involve the nervous system. Yet these agents under experimental conditions are highly injurious to nervous tissue. Finally, in the course of or during convalescence from some diseases, e. g., measles, varicella, smallpox and vaccinia, a very small percentage of patients develop signs and symptoms referable to the central nervous system. In these patients the cerebrospinal injury occurs as a rare complication of exceedingly common diseases, and the exact relation of the inciting agents of these maladies to their complications is in doubt. It is this group of unusual and interesting nervous conditions, particularly postvaccinal encephalitis,[2] that I shall now discuss briefly.

In 1922 and 1923, physicians in England and Holland became cognizant of a nervous disorder that occurs as a rare complication or sequel of jennerian prophy-

2. A complete review of the subject is given in the report on vaccination to the ministry of health, London, 1928.

laxis. To this condition has been given the name postvaccinal encephalitis. Since its recognition, ninety-three cases have come to light in England, 124 cases have been observed in Holland, and a few cases have been reported by workers in Poland, France, Austria, Switzerland, Czechoslovakia and America. The onset of the encephalitis, which occurs in the maximal number of cases on the eleventh day after vaccination, is acute, and the course of the disease is rapid. Fever, vomiting, headache, strabismus, varying degrees of clouding of consciousness, and occasional paralyses of the upper motor neuron type are some of the signs and symptoms that have been described. The cerebrospinal fluid may or may not present abnormalities. Of the ninety-three British patients, forty-three died; the majority of the fatalities occurred within seven days after the onset of symptoms. Of the fifty patients who recovered, twenty-two were subsequently traced; in sixteen recovery was complete, three showed slight mental changes, one has been subject to convulsions, one had a second attack exactly twelve months after the first, and one developed a hemiparesis. Thus, it is evident that the clinical picture presented by postvaccinal encephalitis is unlike that usually seen in poliomyelitis or in epidemic encephalitis.

Histologic studies of the brains and cords in fatal cases disclosed lesions characterized by a few scattered hemorrhages and a definite perivascular infiltration involving the white matter more than the gray. Some pathologists for a time believed that the lesions were similar to those seen either in epidemic encephalitis or in poliomyelitis. Turnbull and McIntosh, however, were not of this opinion and contended that they found characteristic or specific lesions in postvaccinal encephalitis consisting of perivascular areas of softening situated mostly in the white matter. In 1928, Pedrau reported that by means of appropriate staining methods he was able to demonstrate areas of demyelinization around the vessels of the brain and cord. Furthermore, it is his opinion that these areas are identical with the areas of softening noted by Turnbull and McIntosh. He believes, however, that such areas of demyelinization are not pathognomonic of postvaccinal encephalitis, as they have been observed in certain forms of encephalitis following smallpox, measles and other infectious diseases, and also in early cases of disseminated sclerosis. Perdrau's observations have been confirmed by Bouman and Bok and others, and in view of them it is evident that the pathologic operations in postvaccinal encephalitis also differ from those ordinarily seen in poliomyelitis or in epidemic encephalitis.

Postvaccinal encephalitis is a rare sequel of an exceedingly common procedure, jennerian inoculation. Consequently, one may well inquire whether a similar condition occurs alone or unassociated with other morbid conditions. Moreover, in view of the large number of persons vaccinated each year, one would like to know whether a few cases of postvaccinal encephalitis can be accounted for on the basis of fortuity; i.e., two entirely different disease-producing agents accidentally operating simultaneously yet independently in the same person. In spite of ignorance regarding the cause of postvaccinal encephalitis, the consensus of investigators, based on epidemiologic and statistical data, is that jennerian prophylaxis in some manner is related in most instances to this form of encephalitis. This view is further substantiated by the fact that the evidences of the encephalitis appear at a relatively constant time, eleven days after vaccination. Such an opinion, as shown later, does not exclude the possibility of an occasional fortuitous overlapping of vaccinia by poliomyelitis or epidemic encephalitis, nor is it incompatible with the fact that a few cases of encephalitis, clinically similar to postvaccinal encephalitis, and apparently unassociated with any infectious disease, have been reported.

A study of the data dealing with the incidence of encephalitis in vaccinated persons discloses some interesting facts. In England the ratio of cases to vaccinations is approximately 1: 50,000, while in Holland it is 1: 5,000. The difference in the incidence of the disease in these countries may be explained on the basis of the following facts: In England, 63 per cent of all vaccinations are made in infants under 1 year of age, while 66 per cent of the postvaccinal encephalitis occurred in persons between the ages of 5 and 14. In Holland, however, very few infants under 1 year of age are vaccinated. The majority of the inoculations are made in children just under the school age, and 79 per cent of the encephalitis occurred in persons in the third, fourth and fifth years of life. These observations indicate that infants under 1 year of age are relatively insusceptible to postvaccinal encephalitis and constitute a cogent argument in favor of the administration of jennerian prophylaxis during the first year of life. The encephalitis may occur after the first vaccination or following revaccination. The distribution of the disease among the vaccinated population is not uniform, and two instances in which two children in the same family developed symptoms on the same day have been reported. Still there is no definite evidence that postvaccinal encephalitis is contagious.

Although vaccination is in some way related to the encephalitis, the exact nature of the connection between the two diseases is not known. At first, the possibility that the lymph had become contaminated by a neurotropic virus was considered. As many specimens of lymph from a number of sources were used, it is not likely that such a contaminant caused the encephalitis. Furthermore, no extraneous virus has been experimentally demonstrated. Turnbull, McIntosh and a few others believe that the vaccine virus itself is directly responsible for the encephalitis. This opinion is based on the facts that in several instances small amounts of vaccine virus have been demonstrated in the brains in fatal cases, and that injections of vaccine virus into the brains of animals induce an encephalitis similar to that observed in human beings. Most investigators, however, are not in agreement with these workers, and contend, in the first place, that they have been unable to recover vaccine virus from the brains in fatal cases; secondly, that the amounts of virus found by Turnbull and McIntosh are not necessarily significant because Blaxall and others have demonstrated the presence of vaccine virus in the blood, internal organs and brains of vaccinated animals not showing any evidences of encephalitis; and, finally, that intracerebral injections of vaccine virus in animals do not cause an encephalitis of the same nature as that seen following jennerian inoculation in man.

If vaccine virus alone is not the cause of postvaccinal encephalitis, and if fortuity does not account for the apparent relation between the two, what, then, induces this malady of the central nervous system in certain vaccinated individuals? Many investigators have adopted as a working hypothesis the idea that the vaccine virus activates an unknown latent neurotropic

virus, or that vaccine virus acting with an unknown agent produces a disease clinically and pathologically unlike that caused by either incitant alone.

Jennerian prophylaxis is an old procedure. Why, then, has postvaccinal encephalitis only recently attracted much attention? Did it occur before 1922? Has a new virus made its appearance? Has a non-pathogenic virus become virulent? Has a mutant arisen from an old virus? Does a similar condition follow other infectious diseases? Have constitutional changes occurred in human beings that increase their predisposition to this type of nervous disease? Most of these questions cannot be answered at present. Although postvaccinal encephalitis has increased in prevalence since 1922, it undoubtedly existed prior to that date. In 1905, a case was reported in France by Comby; another one was observed in 1912 at the London Hospital. Moreover, it has been known for a long time that smallpox, varicella and measles are occasionally followed by an encephalitis that is clinically and pathologically similar to, if not identical with, postvaccinal encephalitis. For example, Barlow, in 1887, reported an instance in which measles was complicated by a disseminated myelitis.

Although encephalitis following measles has been recognized for many years, it seems to occur more frequently now than formerly. Ford,[3] in 1928, reviewed the literature dealing with the nervous complications of measles; he found descriptions of 113 cases, and added twelve new ones in which the brain or cord was involved during or after an attack of this exanthem. As a rule, the onset of the encephalitis or myelitis occurred after the fever had fallen and the rash had begun to fade. The symptoms and signs were indicative of injury to the cerebellum, cerebrum or cord. There was a mortality of 10 per cent. In 35 per cent of the survivors, recovery was complete. Frequently, autopsy reports were so incomplete that it was impossible to obtain accurate descriptions of histologic changes in the nervous system. In a number of cases, however, the occurrence of a perivascular infiltration of cells and demyelinization similar to that found in postvaccinal encephalitis was reported.

Following or during the course of antirabic treatment, a few individuals develop symptoms and signs referable to the central nervous system; viz., headache, vomiting, retention of urine, pareses and paralyses. Some of the patients die, but many completely recover. The ratio of neuroparalytic accidents to patients given the Pasteur treatment is approximately 1:4,000. The incidence is higher in Europeans and in well educated people than in natives of tropical countries or in manual laborers. There appears to be in some individuals a predisposition to this type of nervous disorder.

The neuroparalytic accidents following antirabic treatment were first observed in 1887. Since that time many opinions have been expressed concerning their nature and cause. It is unnecessary to review the work in this field, because it has been adequately considered in the report of Marie Remlinger, and Vallée to the International Rabies Conference held in Paris in 1927, and also in an article by Stuart and Krikorian,[4] which appeared in 1928. From these reports it is evident that paralysis following antirabic treatment is caused not by rabic virus but by repeated inoculations of the brain tissue carrying the virus. Moreover, similar nervous disorders have been experimentally produced in animals by repeated subcutaneous inoculations of homologous or heterologous normal brain tissue. In what manner these injections induce paralysis is not known. Some workers, however, are inclined to believe that an unknown latent virus is activated. Regardless of the cause of the phenomenon, the pathologic picture, perivascular demyelinization, observed in fatal cases is similar to that found in postvaccinal encephalitis.

In this connection, it is of interest to note that Swift,[5] in his studies of bacterial allergy, observed that a few of the rabbits became paralyzed during the course of repeated intradermal inoculations of streptococci. The majority of the animals completely recovered. Also Julianelle [5] has noticed that a small percentage of his rabbits receiving repeated intradermal injections of dead pneumococci developed paralysis. Unfortunately, no examinations have been made to ascertain whether perivascular demyelinization occurs in this type of paralysis.

Thus, following many infections, and even after repeated injections of supposedly noninfectious material, such as emulsions of normal brain tissue, both in man and in experimental animals, nervous disorders, clinically and pathologically similar, occasionally develop. Moreover, the perivascular infiltration of cells and demyelinization that is common to many postinfectious or postinoculation nervous accidents is also a cardinal feature in the early stage of disseminated sclerosis. Indeed, the pathologic pictures observed under such diverse conditions so strikingly resemble one another that Perdrau has been led to hypothesize for all of them a common etiologic factor. Furthermore, many investigators amplify this conception by stating that the encephalitis may be due to an unknown latent virus aroused to activity by various stimuli such as measles, vaccinia and antirabic treatment, or that it results from a "double or combined infection." These are excellent working hypotheses, but very little direct proof has as yet been adduced in their favor. The chief objections to the hypotheses are, first, the necessity of assuming the presence of an unknown latent virus in such a variety of hosts as human beings, dogs and rabbits, and, second, the improbability that such diverse incitants as vaccine virus and normal brain tissue acting in combination with an unknown virus in different species of animals are capable of causing a constant clinical and pathologic picture.

One must remember that vaccinia, measles and varicella are common diseases and that their nervous complications are rare. A more extensive clinical and pathologic study and a more thorough comparison of these nervous disorders should be made before final conclusions regarding their etiology are reached. There is no reason why the virus of measles and vaccinia cannot injure the nervous system. Nor is it unlikely that a fortuitous overlapping of these diseases by poliomyelitis and epidemic encephalitis occasionally occurs. Thus, it is highly probable that encephalitis following infectious diseases may not always result from the operation of a common etiologic factor. If this is true, then the clinical and pathologic pictures observed in these cases should vary. Not all of them are identical. Yet many are, and it is this group that at present particularly interests investigators.

In addition to the hypotheses already presented, I offer another as an attempt to explain how similar nervous accidents may arise under a variety of condi-

3. Ford, F. R.: Bull. Johns Hopkins Hosp. **43**: 140 (Sept.) 1928.
4. Stuart, G., and Krikorian, K. S.: Ann. Trop. Med. & Parasitol. **22**: 327, 1928.

5. Personal communication to the author.

tions. As the involvement of the nervous system usually appears late in the course of the diseases under discussion, or after repeated injections of such materials as brain emulsions, it is within the realm of possibility that some basic phenomenon, for instance hyperergy, related to the biologic activities that occur in the body on the entry of infectious agents or other types of foreign substances, may account for this kind of encephalitis. I am aware of the fact that many workers will object to this suggestion on the grounds that allergy is being too extensively invoked in efforts to explain the manner in which a variety of abnormal conditions arise, and that it is unnatural for the body to react to invasion in a way that will result in injury to itself. In this connection, however, one must keep in mind the fact that allergy or altered reactivity is a universal phenomenon associated with all infections and with the parenteral entry of many foreign materials. Furthermore, not all states of allergy are purposefully protective or beneficial to the body.

In case some factor of the nature mentioned is capable of producing changes in the central nervous system, why, then, is encephalitis not more prevalent? The infrequency of these nervous disturbances is not surprising, if one considers them accidents dependent either on the constitutional predisposition of certain individuals or on some chance abnormality of the blood vessels of the brain and cord. These ideas may at first appear absurd, but, in view of recent work on allergy, they are worthy of serious consideration, not only in connection with encephalitis following infectious diseases but also in relation to other obscure nervous disorders.

ANOXEMIA IN PNEUMONIA

MECHANISM OF OXYGEN THERAPY *

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A scrutiny of the problem of pneumonia with the involved physiology of metabolism brings forth a new picture of the malady. Physiologists have opened fields of investigation which bear a close clinical relationship to the problem.

In pneumonia there is an invasion of the body by pneumococci. The body reacts by forming antibodies to combat the invasion. The virulence of the invading organism is variable, both at the beginning of the attack and as the disease progresses.

The rapidity with which the patient builds antibodies varies. In each person there is a variation in antibody formation (resistance) as the disease progresses. A pneumococcus of low virulence, attacking an individual possessing rapid antibody formation, is soon stopped (abortive pneumonia). On the other hand, the combination of a virulent organism invading an individual with inadequate antibody formation usually results in a fatality.

Any therapeutic measure that will elevate or prolong resistance, or that will lower the virulence of the attacking organism, will decrease the mortality rate in pneumonia. Since the virulence of the organism cannot be controlled, building and maintaining the patient's resistance must be the physician's aim. The more nearly normal the physiologic activities of the body are kept, the more active will be the resistance and the longer will the body reserves hold out.

In lobar pneumonia there is a variety of sequent pathologic pictures. The lung, representing the initial seat of the attack, presents engorgement closely followed by consolidation. Fever indicates the body reaction to the invasion.

Fever elevates metabolism about 7 per cent for each degree and this constitutes the first call on the body reserves. Tissue is more rapidly burned and an increased load is thereby put on the cardiovascular system in supplying the greater demand for food and oxgen: food to furnish power to carry on the body work and oxygen to support the increased metabolism.

As engorgement progresses to consolidation, the pulmonary absorption area may be decreased to the extent that sufficient oxygen for the support of the increased metabolism cannot be delivered into the blood from an ordinary atmospheric environment.

The patient early develops a pleuritis, the pain of which, through the physical and mental excitement that it provokes, further increases the body metabolism. The patient manifests the anxious restlessness of air hunger early, with the pleuritic pain inhibiting a fuller respiratory excursion to supply the additional air that is needed. This restlessness is another potent factor in increasing body metabolism. Thus, with the arterial oxygen low and the metabolic oxygen demand high, nature reacts by increasing the cardiac output to compensate for the increasing oxygen unsaturation of the blood and body tissues.

Physiology depends largely on oxygen for its support. Any oxygen deprivation interferes with the complete combustion of body wastes, with the inevitable resultant dysfunction of cell acidosis. An acidotic cell cannot utilize the food that is carried to it.

Dextrose furnishes largely the power by which muscle contracts and by which the body carries on. In the execution of this power, through chemical combinations or reactions, dextrose is converted into lactic acid. In the conversion of dextrose to lactic acid oxygen is not required. However, whereas probably five parts of dextrose are thus converted into lactic acid through muscle work, four parts of this lactic acid are reconverted into dextrose, to be used again in the repetition of the same process. This reconversion is notably an oxidation reaction. The remaining fifth part of lactic acid is further converted by oxidation into carbon dioxide and water, in which form it is eliminated.

Any interference with the reconversion of lactic acid into dextrose will necessarily rob the body tissues of their sustenance. In pneumonia, such interference is in proportion to the degree of anoxemia present. Also the same oxygen depletion, by its failure to support the reconversion of lactic acid into dextrose, will leave deposited within the cell proportionately more waste lactic acid, which cannot be eliminated.

Thus in prolonged partial anoxemia a vicious circle is formed. Assimilation of food is inhibited because of cell acidosis, and cell acidosis cannot be relieved without oxygen. There is an ever increasing demand for oxygen with a progressively decreasing oxygen supply. Therefore nature continues to impose more work on the heart in an effort to provide a compensatory increase of blood to the cell.

* Sequel to Guedel, A. E.: Oxygen Therapy in Pneumonia, J. A. M. A. 84: 1490-1491 (May 16) 1925.

It must be remembered that every cell of this overworked heart muscle is as sick as any of the body cells that it is trying to serve and that the heart can have no greater sustenance or freedom from accumulated acid waste products than any other body tissue. If the antibody defense is raised to sufficient power to neutralize the toxins of the invading pneumococci before the heart must collapse, recovery is more assured. In pneumonia the immediate problem is the heart. The general problem is the maintenance of physiologic function.

MECHANISM OF OXYGEN THERAPY

By elevating the partial pressure of oxygen in the atmospheric environment of the patient, a greater quantity of oxygen is forced through the alveolar membrane of the lungs into the blood.

The common error in the application of oxygen in pneumonia has been the delay in waiting for the full development of an anoxemic acidosis with dyspnea, cyanosis and a failing heart before beginning its administration. Oxygen to be of value in pneumonia must be applied early. It is easier to maintain a normal physiologic state than it is to retrieve it after it has been reduced by acid intoxication and malnutrition.

The time to begin oxygen in pneumonia is as soon as its application will reduce the heart or respiratory rate or will provide increased rest and comfort for the patient. Oxygen cannot do any harm during the pneumonic period, even in much higher tensions than are commonly employed.

The diffusion rate depends on the difference in partial pressure of gases on opposite sides of the diffusion membrane. It is also influenced by the degree of permeability of the membrane.

The 20 per cent oxygen of atmospheric air forces ample diffusion through the normal lung. In the pneumonic lung the inflammatory engorgement and exudate impairs the activity of the alveolar wall as a diffusion membrane over an area considerably greater than that which is rendered totally impermeable by consolidation. Therefore the 20 per cent oxygen of atmospheric air is not sufficient to pass in requisite quantities through the barrier, and one must aid nature by increasing the partial pressure of oxygen in the environment.

An atmosphere containing from 30 to 50 per cent of oxygen is adequate to eliminate the anoxemic factor in pneumonia. It should be administered as nearly constantly as possible until well after the crisis or until its removal does not produce any sign of anoxemia. The tension or dose is regulated to meet the increased metabolic requirements and the reduced pulmonary absorption activity in each case. The slogan is "Keep the finger-nails pink."

When the application of oxygen is begun, the patient should be assured that it is not a method of last resort but a rational therapeutic measure, whether the condition is serious or not. Because of the former inadequate methods of administration, oxygen has become known to the public as a harbinger of death. Without judicious explanation, the patient and friends are apt to regard it as the end of all hope.

Oxygen therapy in pneumonia to the abolition of anoxemia accomplishes the following: It provides a higher oxygen saturation of the blood and thus lessens the heart load. It supports the functions of waste combustion and cell nutrition. It supports the aerobic stage of muscle work (reconversion of lactic acid into dextrose) and thus conserves food resources. Finally, the cell, having less lactic acid thrust on it and having oxygen support for the combustion of that which it must eliminate, is kept in a more nearly normal physiologic state.

The same is true of the heart. Its fatigue products are better carried away, its cells are better nourished, and its work is less. Under ample oxygen support the pneumonic heart, as well as the entire human organism, carries on better and longer than would be possible under partial anoxemia. A few hours or days added to the resistance period contributes that much more time for the completion of the antibody defense.

Finally, the intelligent administration of oxygen in pneumonia is physiologically sound. Although it cannot constitute an entire treatment, it is an important therapeutic measure and should be more seriously considered.

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MANAGEMENT OF DRUG ADDICTS IN UNITED STATES PENITENTIARY AT ATLANTA *

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A review of our experience with drug addicts at the United States Penitentiary in Atlanta has revealed some interesting observations. Before recounting these it may be helpful to summarize briefly the present accepted methods of treatment of drug addiction.

Like alcohol, morphine seems most abused when most prohibited. It is said that in the East, where it is used commonly in opium smoking, it is relatively much less harmful than here where the ill effects of habitual administration, particularly by hypodermic, are well known. Because of these ill effects and the sufferings of those from whom the drug was withdrawn by the Harrison Narcotic Law, several methods of treating the addiction have been evolved.

In addition to the withdrawal of the drug, all of these methods aim to prevent pain and cause sleep, to promote elimination, to support the circulation, and to improve the self-control as well as the general health of the patient. In the very nature of the case the hospitalization of the patient is usually necessary, both for the technical and for the moral effectiveness of the treatment. The medical treatments consist of modifications of the following: (1) gradual reduction of morphine; (2) administration of one of the atropine series, and (3) vigorous catharsis. The dangers of sudden withdrawal of the drug are always stressed.

The Lambert-Towne treatment is one of elimination, and rapid withdrawal of the drug, with the administration of a mixture of tincture of belladonna, 60 cc.; fluidextract of xanthoxylum, 30 cc., and fluidextract of hyoscyamus, 30 cc. Strychnine and digitalis are used if necessary to support the circulation.

The Pettey treatment makes use of catharsis, forced fluids, vapor baths and several drugs, including atropine and scopolamine, for the sedative effect,, with spartein sulphate for support and sodium thiosulphate for a detoxicating agent.

* Read before the Fulton County Medical Society, Nov. 15, 1928.

The Jennings treatment uses ethylmorphine hydrochloride in place of morphine, with spartein sulphate for the support of the circulation. It also stresses hygienic measures and the teaching of self-control.

The Sceleth method consists of a preliminary dose of a saline cathartic with the administration of a mixture of scopolamine, pilocarpine, ethylmorphine hydrochloride, cascara sagrada and alcohol, the size of the dose depending on what the patient has been taking. Strychnine is given for support.

Recently the preparation "Narcosan," advocated by Lambert and Tilney, has been used at the various penal institutions and hospitals of correction around New York. Narcosan is said to be a solution of lipoids, nonspecific proteins and water soluble vitamins. Its use has been urged on us with the results reported here.

During the past two years at the Federal Prison Hospital we have treated 454 patients for addiction to the use of morphine or heroin, while during the past three years the type of treatment about to be delineated has been followed. In no case has any patient been given a single dose of the drug while undergoing treatment for the drug after entering the institution. Our usual method of treatment is what is known in the parlance of the drug addict, or "junker," as "cold turkey." It consists essentially of absolute withdrawal of the drug with an initial dose of mild mercurous chloride and a daily dose of magnesium sulphate. Sedatives such as sulphonmethane and chloral are used freely, with simple measures such as sodium bicarbonate and orange or lemon juice to combat nausea. Perhaps our most powerful therapeutic agent is the absolute certainty which the patient has that he will not receive any more "junk," regardless of contingencies. When this is understood there is usually surprisingly little fuss and no remarkable objective indication of discomfort. Usually by the third day the patient's nausea, pains and muscular twitchings, either or all, when present, are over; his appetite has returned, and he seems much improved. He is discharged from the hospital and put to work as soon as possible, so that muscular fatigue may help him to sleep.

Contraction of Drug Habit *

Bad company		Sickness		Ruined in business	1
Pleasure		Operation		Opium smoking	25
Curiosity		Injury		Whisky	18
Fun				Syphilis	5
No reason			177	In army	14
	173			Father an addict	1
				Second admission	34
				Third admission	7
				Fourth admission	5
				Claims no addiction	1
					111

* Of this total of 461, four patients are not considered because the habit was broken in jail before their arrival at the penitentiary. Percentages are based on treated cases only.

Because of the commonly understood dangers of circulatory collapse in these cases we have taken careful daily blood pressure readings, and four-hourly pulse and temperature observations during the patient's stay in the hospital. Of the 454 patients, only 126 showed a variation of either systolic or diastolic blood pressure of 10 points or more. Of these, only twenty-two varied 20 points or more and in none were there any symptoms of collapse that were sufficient to cause anxiety. In two cases of marked hypertension there was a drop in the systolic pressure of 56 and 43, respectively, but the pulse rate in both remained within normal limits and these patients were neither in danger nor in appreciable collapse. In the majority of those exhibiting variation in pressure the change was in the nature of a fall in pressure such as might be expected from lying in bed, but in four of the twenty-two patients with a fluctuation of 20 or more points there was a rise in pressure.

The pulse seemed even more constant; in less than forty cases was there a fluctuation of 20 beats a minute and in only ten did the variation exceed 30 beats a minute. These, with one exception, were patients with pulses of about 100 on entry who gradually regained a normal recumbent pulse of about 70.

Of the 454, seventy-eight, or 17 per cent, had a temperature elevation of 100 F. for one or more days. This usually occurred on the second or third day and was explainable only by the effects of the treatment, except in two or three cases. Of the patients showing fever, thirty-three were among those taking Narcosan; that is to say, 63 per cent of those treated by Narcosan had fever, while only 11 per cent of those treated by the "cold turkey" method had fever.

Likewise our records show that 160 patients were given sodium bicarbonate to combat nausea, and forty-six of these were in the small group of fifty-two taking Narcosan. The most severe cases of vomiting seen were in those treated with Narcosan. Recently we have been receiving men for treatment who have been treated elsewhere by Narcosan. They agree with us that Narcosan makes the patient more uncomfortable than simple withdrawal and purgation without other treatment. Several of these men have asked that they be allowed to take the "cold turkey" without Narcosan.

As an index to general improvement under treatment and after withdrawal, these patients are weighed monthly for three months after discharge from the hospital. Thus we find that of 450 men weighed, eight had neither lost nor gained since admission; 340 men had gained since admission, and 102 had lost since admission. The total poundage gained was 4,505 (2,045 Kg); the total poundage lost, 662 (298 Kg.), and the net gain, 3,843 (1,730 Kg.). The average gain per man in three months was 8 41/100 pounds (4 Kg.).

These men are interesting as individuals or as a group. Characteristically, they lie even when the truth would serve them better, but it may be significant to see how they contract the habit according to their own statements, which are shown in the accompanying table.

It might be suggested that as a matter of fact our method is not actually a sudden complete withdrawal of the drug, since the prisoners during trial and transportation have not been able to get their usual dose of the drug and this is in effect a gradual reduction. In some cases this is undoubtedly true, but, on the other hand, officers in charge of these patients dispense the drug quite freely and, having only the patient's statement to guide them, may often give doses larger than have been customary. Certain it is that we see many patients on entrance that are suffering from overdosage rather than underdosage.

The situation at the Atlanta penitentiary is unique in that the patient knows that he does not have any recourse to plea or subterfuge which will procure the drug for him while he is in the institution. He can't fire his doctor. This unfortunately is a condition that cannot be duplicated in private practice or in sanatoriums, for it is without doubt one of the most powerful therapeutic agents.

There are, of course, certain conditions that present very grave problems, such as tabes dorsalis with severe lightning pains, which may have been the cause of the patient's use of morphine. Withdrawal leaves these patients miserable and there is no effective substitute for relief of the pains.

In thirty-six cases a transient albuminuria was noted during treatment. The albuminuria was not persistent except in cases in which organic lesions of the kidney were present before withdrawal of the drug.

The figures submitted by the warden of the prison regarding the number of men who are cured by confinement in a penal institution are perhaps not particularly promising. According to these figures more than 90 per cent of the men incarcerated for one year or less return to the habit, whereas men kept in prison for from three to five years return to the habit in only about 17 per cent of the cases. Thus it would seem that long periods of confinement are necessary in order to produce any real beneficial effect on drug addicts.

Finally, we can only reiterate that sudden and complete withdrawal of narcotics has in our experience been a perfectly safe procedure. Narcosan, instead of being useful, actually makes the patient more uncomfortable during withdrawal. We point out, too, the tremendous average gain in weight and health after withdrawal, and when the patient leads an orderly hygienic existence such as is maintained within the prison walls.

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THE FUTURE OF SURGERY *

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History records the conclusions of many distinguished surgeons who were beguiled by the great advances of their day into a false confidence that the zenith had been attained. In this twentieth century I believe that it would be safer to err on the side of optimism, and to suggest the advent of achievements beyond our present dreams. To avoid this difficult field of prophecy I shall confine myself to a few conjectures on the affairs of the surgeon-to-be.

There does not seem to be any rent in the veil that covers the future which even remotely suggests that the labors of the surgeon and his responsibilities are to be lightened. If we may make any deductions from the truly remarkable developments during our period, it would seem to be that the future will witness increasing demands on his skill, training and experience. How is this supersurgeon to be selected, educated and supported? Much of the responsibility for his qualifications must rest on the leaders of surgery of today.

Perhaps we might take stock of present failings before we look forward to the rosy promise of tomorrow. The two most serious criticisms of surgery are that unnecessary operations are performed and that poor work is done because of inexperience or lack of ability. That these evils are still too prevalent can hardly be denied. They may be traced to fundamental defects in the selection of medical students and to inadequate training. Liberal financial support of the medical school seems to offer the best form of insurance against unqualified graduates. Subsidy to this end by federal, state and private agencies is essential if poor surgery is to be eliminated. State appropriations for their universities and hospitals, private endowments and the large gifts by such agencies as the General Education Board and the Rockefeller Foundation have made substantial progress toward this ideal of a liberal financial provision for medical and surgical training.

The present internship demanded as a preliminary to graduation in many schools is an indication that a broader application of the principle of supervised postgraduate experience is not far distant. The cost of medical education at the present day with its constantly increasing demands is beyond the resources of many aspirants for a medical career. Adequate financial aid must be supplied and preferably not in the form of a loan or mortgage on future earnings. Such a program would not have socialistic aims—it would be the obvious response to a clear need for a living wage in the final years of prolonged training for a vital service to the public. The services of such men, although still in training, would have a very definite value.

Billroth, writing fifty years ago from Vienna, estimated that medical preparation up to the point at which an established income might be expected required about fourteen years and an expenditure of some 24,000 marks. He made the following gloomy statement in this connection: "Any one who is without these material resources should understand that from the outset he will be plunged into a chaos of discomfort and discontent from which he will seldom completely emerge, and that the memory and effects of these experiences will leave their impress on his mood and his character for life." As to the amount of work that might be covered in the usual course, Billroth had no illusions. "We must not deceive ourselves and the government . . . as to the amount of actual knowledge, the degree of scientific accomplishment, and of technical equipment that can be acquired in four or five years by a man of average talent, average energy and average preparation."

It is in surgery that I can most clearly visualize the need for greater training, free from the financial demands, which are prohibitive for many who possess the ability and character to render distinguished service to the community. The principle of the scholarship or residency with remuneration, developed on broad lines, is needed to insure a high standard for practical surgery, as well as to produce research workers and teachers. That these greater opportunities should be granted to the promising aspirants is obvious, and that their achievements during training should receive an adequate recognition is equally obvious. This recognition would probably be most effective in the form of a degree in surgery, conferred by a university of good standing, under conditions giving the necessary supervision of postgraduate training.

I do not see how surgery can attain the dignity and safeguards that it deserves while the degree of doctor of medicine, or a state license to practice, is its only guarantee. It is the absence of any assurance of adequate special training which I venture to suggest must be remedied in the future, if the foundations of surgery are to stand accredited. The aims and accomplishments of the American College of Surgeons to this end are admirable and a definite step in the desired direction. I do not believe, however, that the College of Surgeons, or any federal or state agency, can replace the university or relieve it of its responsibility to surgery.

We may not have entirely lived down the period when surgery was an industrial guild below the dignity

* Read before the Southern Surgical Association, White Sulphur Springs, W. Va., Dec. 11, 1928.

of the physician. For nearly seventy years preceding the middle of the last century, the Vienna Surgical Clinic was devoted exclusively to the lay surgeon. In the evolution of medical teaching it is little more than a hundred years since surgery deserted the trades and attained recognition in the medical curriculum. Obstetrics, ophthalmology and other special phases then began to emerge. The development of surgery as a branch of medicine—perhaps an inferior branch—is emphasized because there are still some indications of this attitude in the medical schools.

Up to the present all the activities of the physician or surgeon have been performed under a single degree. This is no doubt a survival of the tradition that the isolated physician must provide aid and assistance in every emergency known to medicine. The granting of this unlimited degree permits the graduate to practice in any special field that he may desire, without regard to whether his assumption of proficiency is based on an adequate postgraduate training, on experience gained by main strength and awkwardness, or merely on personal proclamation.

A more definite point of cleavage must in time be established between the broad lines of medicine and surgery, leading to a distinctive degree for each. Separation might begin with the internship or postgraduate period, or at an earlier stage, but the increasing need of longer training demands adequate recognition. The unavoidable limitations of the medical school in the past have made any such program largely unattainable; but with the rise of university ascendency in medical education, the better appreciation of university ideals and more generous financial support, the necessary postgraduate supervision seems a possible development of the near future.

There can be no question that the well nigh universal affiliation of the medical school with established universities will do much to raise the standards of future surgery. There is some reason to believe that the medical school is not the favorite child of the university family group and that it has not as yet attained full favor with the regents. No doubt there are definite reasons for this: The traditions of medical teaching in comparatively modern times have not always been of the highest, particularly when judged from the academic point of view; the cost of the medical department is unquestionably a large one; the necessity for adequate hospitals, clinics and laboratories involves a heavy expense and many of the medical departments absorbed have furnished vexatious problems in reorganization and have required a large outlay for new equipment. That the university has accepted this task in a commendable spirit and has displayed great energy in the advancement of medical training is everywhere evident. The university is also extending its influence into the field of postgraduate medical training. The gift of prophecy is not required to foresee that the entire field of medical teaching and clinical experience must eventually devolve on the university, or that the medical department will become a graduate school. I believe that we may look forward to a further development of university influence in the form of additional medical degrees.

In "American Universities and Colleges," 1928, the list of degrees granted is given. Two medical degrees, doctor of medicine and bachelor of science (in medicine) are mentioned. No degree in surgery appears. Degrees in special fields of medicine, such as sanitation, public health and hygiene, are listed. In contrast to this frugality, the law schools confer a baker's dozen.

I do not see how we can reconcile the importance of the present-day responsibilities of the surgeon with the lack of a distinguishing degree. In the history of the early development of medicine, surgery held a very unimportant part, as far as honors were concerned. In the period when medicine was largely a disputation of theory and dogma, a medical degree was held in high esteem. The surgeon, however, was ranked more or less as an artisan.

In recent years the degree of doctor of medicine has been shared impartially by the surgeon and by the internist, and only occasionally has it been unworthily bestowed. I do not believe that any degree has ever been more honorably or more unselfishly served. I do not believe that any degree has been held in more general esteem. It is with no thought that this designation should be superseded or replaced that I venture to suggest the need of an added degree in surgery. With the passing of the general practitioner and the general surgeon, some warrant of special training and skill seems inevitable. When this end is attained the surgeon will enter on his duties with more dignity, a more certain position and a greater responsibility than now obtains. I believe that we can look forward to the day when all reputable hospitals will demand an adequate degree in surgery from those who operate in their amphitheaters.

In attempting to visualize the training of the surgeon of the future I have no wish to suggest that any educational system will produce finer surgeons than the leaders of today, or than we find in the history of the pioneers of our profession. Surgery has always attracted men of the highest character and ability, who have outstripped the standards of the teachings of their day. I do believe, however, that the future will see the gradual elimination of the man of poor ability and inadequate training. We still see in the clinics and postgraduate courses men who are ineffectually endeavoring to secure a belated training, denied to them by the struggle for existence. Many of these, of course, lacked initial ability, but we may look forward with some confidence to the elimination of these aspiring surgeons at an early stage of training to the great advantage of the individual and of society.

It is my main intention in this rather hasty survey of the future problems of surgery to suggest that the university should stimulate an orderly postgraduate preparation, by providing supervision, opportunity and the proper requirements leading to a special degree. That the future will bring forth some such development seems assured by the remarkable advances we have seen in the standards of medical education—advances largely due to the vision, influence and untiring labors of the Council on Medical Education and Hospitals of the American Medical Association.

SUMMARY

Present Conditions.—1. Men imperfectly qualified, even assuming a liberal standard, are doing surgery in every community.

2. Students, under present conditions, cannot be adequately trained for the diverse activities that they will inevitably assume after graduation.

3. The public is not safeguarded by the present diploma from a medical school, however well accredited it may be, since it seems to imply special qualifications as a surgeon or specialist, which it cannot guarantee.

4. The financial burdens devolving on the surgeon-to-be are so heavy that they seriously impede adequate training.

Forecast.—The growing strength of the university and its ascendency in medical education suggests: (1) the graduate school of medicine as the coming standard; (2) the separation of the special fields of medicine prior to the granting of degrees, and (3) university supervision of postgraduate study leading to a special degree.

CHRONIC ULCER OF THE LEG

REPORT OF THREE HUNDRED CASES TREATED WITH A MODIFICATION OF THE ORIGINAL UNNA'S PASTE BANDAGE *

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The formation of leg ulcers, the causes of which are varicose veins, traumatism, debilitating diseases, syphilis and the nutritive changes incident to age, is preceded by vascular changes. The most common ulcer, the varicose type, is preceded by a decompensation of the valves situated in the short perforating veins between the superficial and the deep venous systems; these valves are overcome by the weight of the blood column, with resulting stasis and varicosities. The nutrition of the skin becomes impaired, and the skin becomes eczematous and dark brown from the blood pigment deposits. Trauma usually but not always causes the break in the skin; when the skin is once broken, the process of repair is overbalanced by retrograde changes in the tissues, and persistent ulcers result. The causes that produce the ulcers perpetuate them.

Chronic ulcers pass through three stages: (1) extension; (2) a latent phase in which there is neither extension nor repair, and (3) repair. In the first stage, pain is the chief symptom. There is marked edema and increased local heat, and a definite inflammatory process is set up. There is usually breaking down of the skin and superficial tissues, followed by a profuse, thin, irritating discharge. During this stage the lymphatics become obstructed and the normal current of the tissue juices is reversed, which adds to the necrotic slough. The second stage presents the picture of chronicity, with sharp, well defined edges, the margins of which are dark colored, extremely hard and painful. The base adherent to the underlying structure is covered with a gray-green tenacious exudate, and no granulations can be seen. The discharge has a foul odor and a thick consistency and is somewhat irritating. The second stage has been called the indolent or callous ulcer. The secondary infection is at its maximum in this stage. The third stage is essentially a process of healing; the edges are soft and smooth and are light pink. The base is smooth; dark pink granulations can be seen throughout, which bleed easily. Pain is not present. The discharge is of a serous nature and is abundant. In this stage the lesion has been described as the "weeping ulcer." Again there is the lymphatic flow and admixture of tissue juices, with only slight infection.

Knowing the pathologic condition described, one must demand in a satisfactory method of treatment the following qualifications: care of the active ulcerative lesion and support of the failing circulation of the leg. These ends are better attained by some of the advocated procedures than by others. 1. Martin's red-rubber bandage has been extensively used and has proved itself one of the better forms of treatment; but its application is difficult and frequently results in destruction of the superficial tissues of the leg. 2. The spiral reverse pressure bandage of heavy linen described by Davis is probably the best form of bandage. 3. The A-C-E bandage of knit elastic, although widely used, has in my experience proved to be of no value whatever. Its chief fault is that, through its loss of elasticity with consequent loosening, it soon becomes ill fitting. 4. The rubber stocking made of similar but stronger material lends support to the circulation of the leg and to the ulcer, but after a short period of application there is atrophy of the superficial tissues and general discomfort.

All of these methods have in addition to their own individual faults one common failing, which is that they do not provide any mechanism for the care of the discharge from the ulcer, the irritating effect of which is a factor of prime importance in the determination of the chronicity of the lesion. A satisfactory dressing must allow a free escape of the slough from the ulcer bed and must exert an elastic pressure over the granulating surface, and the dressing material must have an antiseptic property. I have used a modification of the original zinc gelatin paste devised by Professor Unna of Vienna and later advocated by Professor Michiels; the original procedure was described in the *Chicago Clinic* of 1900, and more recently has been commented on by Dr. Ochsner, who has used it with uniformly good results over a period of fourteen years. The paste was originally made by combining gelatin 4 parts, zinc oxide 4 parts, glycerin 10 parts, and water 10 parts. This mixture, when cold, forms a homogeneous white mass having a rubbery consistency and a melting point of about 160 F. After its preparation it is placed in a double boiler and heated to just above body temperature, at which point it becomes fluid and has a viscosity not unlike that of ordinary paint. In this form it is applied with a paint brush directly to the skin of the leg from the base of the toes upward to just below the knee. It is allowed to come into intimate contact with the ulcer, no preliminary dressing being necessary. A simple spiral bandage without crosses or reverses is applied over the paste, and then more paste is applied over the bandage. This is repeated until there is a total of three layers of bandage and four layers of paste. The final preparation, when cool, becomes rubbery hard and makes a pressure bandage which, because of its slight porosity, will allow escape of the discharge from the ulcer.

Formula for Modified Unna's Paste

Glycerin	1,900 Gm.,	1,425 cc.
Gelatin	625 Gm.	
Water	1,900 cc.	
Zinc oxide	250 Gm.	
Phenol	1.50% of total volume	
	4,675 Gm. — 10 pounds (sufficient for seven dressings)	

Certain criticisms may be made of this dressing. In the first place, it is only slightly antiseptic, and must be changed frequently because of the growth of infecting organisms. It is also, because of its high melting point, not flexible enough to be an ideal paste; and it is only slightly porous and does not adequately take care

* Read before the Johns Hopkins Medical Society, March 21, 1928.

of the discharge from a large ulcer. I have attempted to modify the dressing in such a manner as to meet these criticisms. The formula of the paste that I am using at present is given in the accompanying table. These alterations have seemed to make a much more desirable dressing. The addition of phenol has a threefold beneficial action, as it makes an antiseptic dressing beneath which infecting organisms cannot thrive; it increases the porosity of the paste, and it stimulates the granulating surface. Changing the zinc oxide from 4 parts to 2½ parts increases the flexibility, allows the maintenance of greater elastic pressure, and prevents crumbling. The gelatin which forms the basis of the adhesive qualities of the paste has been increased from 4 to 6¼ parts. This addition lowers the melting point of the paste and increases its flexibility. The modified paste is applied exactly as originally described, except that a figure of eight bandage is carried from the instep around below the malleoli for three thicknesses with each layer of bandage. Attention is thus directed toward obstruction of the normal circulation of the foot in order that collateral circulation may be established in the region of the ulcer.

During the past seven months 300 cases of chronic ulcer of the leg have been treated in my clinic by this method. Of this number, 85 per cent show entirely satisfactory healing; the remaining 15 per cent are still in the earlier stages of treatment and show satisfactory progress. In no case has there been any untoward result. All the patients are ambulatory and are allowed to follow their daily occupations without restriction. A maximum of one hour a week is required for the application of the bandage. The length of time that a single bandage may be left in place depends on the amount of edema and the amount of exudate from the granulating surface. A light gauze bandage may be placed around the more permanent paste bandage and the patient instructed to change the former when necessary. In this manner the exudate which escapes through the pores of the paste will be satisfactorily cared for and the dressing will always present a clean and dry external surface. A paste bandage which has been cared for in this manner has been left in place for as long as twelve weeks, and when at the end of such a period the bandage has been finally removed, the ulcer has been found in excellent condition, sometimes completely healed.

The bandage is suitable for use in any climate. When the temperature is very high it may be dehydrated and fixed with a solution of 85 per cent alcohol, a diluted "solution of formaldehyde U. S. P." (6 per cent), and 9 per cent ether. This solution is applied by simply sponging the bandage.

This form of treatment has also been used in cases of varicose veins with considerable relief on the part of the patient and marked lessening of the edema of the ankles and lower leg. I have also used it in two cases of unhealed secondary burns with very satisfactory results. At the present time I am experimenting with an injection solution for varicose veins which will be reported on shortly.

SUMMARY

1. The original Unna's paste bandage has been modified so as to make it more porous, more antiseptic and more flexible.

2. Three hundred cases of chronic leg ulcer have been treated with this method over a period of seven months. Of these, complete healing has occurred in 85 per cent, and 15 per cent show satisfactory progress.

Medical Arts Building.

BLOOD PRESSURE AND RESPIRATION

HYPERVENTILATION AS A TREATMENT FOR HYPERTENSION

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For some time in a few cases of hypertensive disease of the so-called essential type I have succeeded in maintaining marked reductions of blood pressure levels by deep breathing exercises. Clinical observations in these cases seemed to exclude mere coincidence, and a study of the literature revealed an abundance of direct and inferential data in support of my experiences, which in themselves are too few to permit any conclusions. Physiologic and clinicopathologic data on the correlation between respiration and circulation make it plausible that systemic blood pressure should be profoundly influenced by respiration. In the light of these recently acquired data on the correlation existing between respiration and circulation, it is easy to explain why hyperventilation should reduce systemic blood pressure. In this review of the subject I believe I present proof that hyperventilation is a logical treatment of hypertension. Only the small amount of clinical material and clinical evidence has delayed this publication until now.

In the meantime Tiralla [1] of Bruenn, in the section of internal medicine at the Ninetieth Congress of the German Association of Natural Scientists and Physicians, held at Hamburg in September, 1928, has reported marked alleviation of pathologically increased blood pressure by systematic deep breathing exercises, as observed in a large clinical material over a period of several years. This prompts me to delay no longer but to call the procedure to the attention of all who have the opportunity to put it to the test of large scale experience.

PHYSIOLOGIC CONSIDERATIONS

The profound influence exerted on the systemic blood pressure by the respiration is evident from the following set of physiologic phenomena: Systemic blood pressure undulates with the phases of the respiratory cycle. Forced respiration, or hyperventilation, causes a sharp drop in systemic blood pressure. The respiratory experiment named after Valsalva is known to cause almost total collapse of the circulation. According to Starling,[2] the respiratory undulations of systemic blood pressure are due to the fact that inspiration has a tendency to retard the return of the blood to the left side of the heart. What hyperventilation does to the blood pressure has been demonstrated repeatedly since the acapnic shock experiments of Yandell Henderson. The most recent experiments of this type have been carried out by Vincent and Thompson [3] on a large number of normal subjects, under a variety of experimental conditions. It was concluded from these experiments that hyperventilation—not extending to the point of apnea—produces a 25 per cent drop in the systemic blood pressure. The Valsalva experiment has recently been studied by Buerger with a large number of medical students as subjects. Tracings of respiration and blood pressure were obtained and intra-

1. Tiralla, L.: Proc. Ninetieth Congress of German Association of Natural Scientists and Physicians, p. 983; Supp. Klin. Wchnschr., 1928, number 47.
2. Starling, E. H.: Principles of Human Physiology, Philadelphia, Lea & Febiger, 1926.
3. Vincent, Swale; and Thompson, J. H.: J. Physiol. 66: 307 (Nov. 9) 1928.

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thoracic pressure was simultaneously measured by letting the subject expire with full force against a manometer, after he had taken a few deep inspirations. It was found that, as soon as an intrathoracic pressure of from 16 to 20 mm. of mercury was recorded, systemic blood pressure at first rose a few points for a few seconds and then followed an abrupt and sharp decline of from 80 to 100 mm., in proportion to the rise of the intrathoracic pressure. Buerger [4] concludes that the distending lung retards and finally shuts off circulation in the lesser circulation. Yet Blumgart and Weiss [5] have demonstrated, by direct measurement of the velocity of blood flow through the lungs—a measurement from arm to arm by an ingenious technic—that under pathologic conditions of pulmonary distention the pulmonary circulation time is not prolonged. These workers have measured the velocity of blood flow from arm to arm in a series of patients with chronic high grade emphysema and have found that under these circumstances pulmonary circulation time is rather shortened than prolonged.

It is known from other pathologic conditions, as well as from experimental evidences, that pulmonary distention as such facilitates circulation in the lungs. Hyperventilation in exercise is known to increase the amount of blood rushing to the lungs for arterialization to many times the normal. This is known to be accomplished by the tremendous emphysematous distention of the lungs, in which all its tissues, including its vessels, greatly increase their capacities. While it is true that exercise momentarily raises systemic blood pressure, it has recently been emphasized by Abrahams [6] that the old notion that increased blood pressure is due to exercise is all wrong, the tendency to lowered systemic blood pressure in athletic persons having been demonstrated.

Without further discussion of these physiologic data, the following facts may be recognized: Hyperventilation—pulmonary distention—enhances the blood flow within the lung; it increases the amount of blood circulating within the lung. At the same time hyperventilation apparently retards the return of the blood to the left side of the heart; it prevents a considerable portion of the blood from returning to the left side of the heart within the unit of time necessary to maintain the normal output from the left side of the heart. Reduction of the left cardiac output and a fall in the systemic blood pressure are the result of hyperventilation. From all appearances the amount of blood in question is being retained within the lungs, in the distended vascular bed of the lesser circulation.

CLINICOPATHOLOGIC CONSIDERATIONS

Janeway mentions three factors in the production of increased blood pressure; increased volume of blood, increased peripheral resistance, and increased cardiac energy. Increased volume of circulating blood as a pathogenic factor in hypertension has suggested itself strongly to physicians of all times. Plethora sanguinis—the old ghost of medical ages long past—is by all appearances making its reentry into clinical medicine right now. Ever since Barcroft [7] demonstrated the vastly important function of the spleen as a blood reservoir, the effect of blood depots on general circulation has come to loom large in present-day clinical conceptions. Eppinger [8] followed with investigations of other organs as blood depots, and disturbed depot function, increased circulatory volume and disturbed distribution of circulatory blood volume are being considered as underlying causes of many clinical conditions of disturbed circulation. Eppinger made a study of the circulating blood volume in a series of hypertensive patients and demonstrated the increase of circulating blood volume in all of them. He also found that, contrary to the great increase normally seen on heat application and exercise, these patients show little or no increase of circulatory blood volume on heat or exercise. A similar increase of circulating volume was found by Wollheim in decompensating hypertensive patients. Wollheim [9] even sees the cause of the decompensation in this increased circulating blood volume, which he attributes to disturbed depot function. All this is supported by the experience of ages that bloodletting relieves the symptoms of hypertension and is capable of averting its dangers. Bloodletting has been done for centuries, and is still being done in these conditions ever so frequently and continuously for periods extending in some cases over many years. Grothusen [10] studied the effects of bloodletting orthodiagraphically, and demonstrated marked reductions in the size of the heart following bloodletting. With the recent investigations of Eyster [11] showing that increased blood volume is the most frequent cause of cardiac hypertrophy, the likelihood of hypervolemia as the outstanding pathogenic factor of hypertension becomes more probable than ever.

However strongly hypervolemia suggests itself as the cause of hypertension, one cannot overlook the fact that reliable American investigators, such as Geraghty and Rowntree, could not substantiate the observations of others as regards hypervolemia in hypertensive patients. However, the technic of blood volume determinations is in its infancy as yet, and the results are far from reliable even at the hands of the most careful investigators. It would be unsafe to base clinical assumptions on it, either pro or contra. Furthermore, hypervolemia is not even a condition sine qua non of hypercirculation, which may exist without an absolute increase of the circulating blood volume if a part of the circulation bed is short circuited in such a manner as to cause the given amount of blood to circulate within a reduced vascular area. The greater part of the cardiovascular surface area consists of the huge capillary nets throughout the body. The single capillary area in which changes of surface and capacity are of such nature and dimensions as to be likely to affect the entire circulation is that of the lesser circulation.

As is known, the lesser circulation has the widest capillaries, in greater abundance than any other part of the body. Of this capillary area Starling has demonstrated such variations in capacity as are unique in the body. "At inspiration it may hold one twelfth, with compression it may be reduced to hold one sixtieth, of the total blood volume." Starling remarks that "such changes may exercise considerable effect on systemic blood pressure. The distensibility of the lung capillaries may play an important part in enabling the lungs to act, so to speak, as a reservoir for the left side of the heart." With this statement Starling defi-

4. Buerger, M.: Klin. Wchnschr. **5**: 18-19, 1926.
5. Blumgart, H. L., and Weiss, Soma: J. Clin. Investigation **4**: 173 (June) 1927.
6. Abrahams, A.: Lancet **1**: 429 (March 3) 1928.
7. Barcroft, J.: J. Physiol. **60**: 443 (Oct.) 1925.
8. Eppinger, Hans; and Schürmeyer, A.: Klin. Wchnschr. **7**: 777 (April 22) 1928.
9. Wollheim, E.: Klin. Wchnschr. **7**: 27, 1928.
10. Grothusen, G.: Med. Klin. **23**: 1615 (Oct. 21) 1927.
11. Eyster, J. A. E.: Experimental and Clinical Studies in Cardiac Hypertrophy, J. A. M. A. **91**: 24 (Dec. 15) 1928.

nitely goes on record as the first to have recognized the all important depot function of the lesser circuit. It should be emphasized here that Starling greatly underestimated the capacity of lung capillaries. The amount of blood normally contained in the lungs has recently been estimated with the help of an improved technic by Blumgart and Weiss,[12] who found that the lungs normally hold about 21 per cent of the total circulating blood volume. Just how much this may increase under physiologic or pathologic conditions has as yet to be determined, but it is quite evident that the amount of blood the lesser circulation may take up is nothing short of amazing. It is a fact needing little discussion that depot function of the lesser circuit is of much greater significance than even Starling ever dreamed of.

It is therefore also evident that the shortcircuiting of even a part of this huge capillary bed must profoundly affect systemic circulation. The shortcircuiting of a part of the lesser circulation is frequently observed in pneumothorax and has been the subject of a great deal of experimental study. It is known that large portions of the lesser circuit may be shut off, and the rise in blood pressure thus caused may be only temporary; it is soon reduced by the compensatory distention of the remaining pulmonary areas, which is more than sufficient to make up for the loss of surface. While it is true that the reduction in the area of the lesser circuit may cause an increase in the systemic blood pressure, this will become permanent only if for some reason the compensatory distention of the remaining areas does not follow. The lesser circuit becomes deficient in its depot function, and loss of surface is not made up immediately by the compensatory distention of the remaining surface areas. That just such a condition may be assumed to arise in clinical hypertension will be shown later. Data available in the literature support the assumption of pure hypercirculation without hypervolemia in clinical hypertension. Already Sahli's[13] bolometric studies show that in many conditions of clinical hypertension "hypercirculation" is demonstrable. Hayasaka Enaji[14] made minute volume determinations in a series of hypertensive patients and found a marked increase of minute volume of the circulation in well compensated hypertensive patients. Many students of hypertension interpreted the clinical phenomena of the "full-blooded" and "red-hypertonic" patients as plainly bespeaking the presence of hypercirculation.

To turn now from the circulatory phase of the problem to that of its respiratory phase, I will begin by pointing out some constitutional characteristics of hypertensive patients. Persons with blood pressure levels at the upper limits of the normal range are mostly of the hypersthenic type and frequently show some disproportion between the size of their chests and the rest of their bodies. Even persons whose body size becomes enlarged later in life, thereby developing a disproportion between body size and chest volume, frequently become hypertensive. French clinicians are associating the development of hypertension with the "arthritique" constitution of these individuals, the characteristics of this constitution being a large body, high diaphragm and relatively small chest. Against this constitutional type stands out in vivid contrast the so-called asthenic type of individual with his comparatively large chest, low diaphragm and pulmonary emphysema—as evidenced by the increased resilience to x-rays—all of which goes with his low blood pressure, usually at the lowest normal level of systemic blood pressure.

The relationship between the pulmonary surface and blood pressure has been studied by Lintz[15] and Weinstein[16] in an interesting and thorough investigation of a series of 100 cases. They have calculated the pulmonary surface according to measurements of the pulmonary fields of roentgenograms, which they compared with the patient's body weight. An index of the size of the lungs was thus obtained for each case, which varied between 11 and 2.4, according to the individual case. The tabulation of the data plainly shows that the patient who had the largest lung index had hypotension, while the hypertensive patients gravitate to the bottom of the list with the smallest lung indexes. It becomes quite evident from this investigation that those having high blood pressure have small lungs in the overwhelming majority (86 per cent) of cases. Lintz, who studied these cases clinically, feels that the observations are so conclusive that he ventures the theory of a "pulmopathic inferiority" in hypertensive patients, and also expresses his belief that "deficiency of oxygenation will some day be found to be the underlying cause of hypertension." He points out the well known fact that blood pressure levels of hypertensive patients always go down with reduction in the patient's weight, explaining this by the improvement in the diaphragmatic movements resulting in more efficient respiration.

Lintz does not stand alone in this conception of the pathogenesis of hypertension. Early in 1928 Mirtl[17] described "professional hypoventilation" as observed in a large number of hypertensive patients with a sedentary manner of life. Mirtl expresses his belief that in these cases acidosis resulting from the accumulation of carbon dioxide caused by deficient respiration is the underlying source of increasing blood pressure. Mirtl was probably the first to employ breathing exercises in the treatment of hypertension, and he reports marked improvement in all of the cases thus treated.

The literature on hypertension teems with reports of high diaphragm and its restricted excursions as a frequent finding associated with hypertension. Most writers explain the association with the gastro-intestinal phenomena of intestinal stasis, flatulence and autointoxication, which factors they consider pathogenic in the development of hypertension. It is hardly necessary to go into details concerning the British school of medicine grouped about Sir Lane. In the German literature Roemheld[18] has been identifying, for the last score of years, a large group of hypertensive conditions with his "gastrocardiac symptom complex." This condition he was successful in relieving with a specially devised method of diaphragmatic exercises. For some years past Kisch[19] has repeatedly described his "cardiointestinal syndrome" as a frequent cause of hypertension. In this condition intestinal flatulence—excessive intra-abdominal pressure—interferes with normal diaphragmatic movements and thus becomes the indirect cause of hypertension. With the relief of intestinal flatulence and with the improvement of diaphragmatic

12. Blumgart, H. L., and Weiss, Soma: J. Clin. Investigation **6**: 103 (Aug.) 1928.
13. Sahli, H. H.: Lehrbuch d. klin. Untersuchungsmethoden, 1928, p. 367.
14. Hayasaka, Enaji: Tohoku J. Exper. Med. **9**: 401 (Nov.) 1927.
15. Lintz, W.: Internat. Clin., March, 1928.
16. Weinstein, Siegfried: Med. Klin. **24**: 418 (March 16) 1928.
17. Mirtl, Carl: München. med. Wchnschr. **75**: 994 (June 8) 1928.
18. Roemheld, E.: Aerztl. Rundschau, 1926, p. 36.
19. Kisch, F.: Med. Klin., 1922, p. 46.

excursions, high blood pressure is invariably reduced. Thus are explained the "splendid results" obtained by drinking cures at many spas, to which hypertensive patients flock annually. In the French literature it is pointed out that retention of old feeding habits by persons retiring to a sedentary life after an active past frequently leads to hypertension. Emphasis is put on the hypercirculation thus maintained in disproportion to the downward tendency of other functions in the body.

In relating my own clinical experiences I can be brief. For nearly two years I have been observing a number of hypertensive patients and have been struck with the fact that they were all poor breathers. They showed what I came to call "the low breathing habit." The features of this phenomenon are a markedly reduced respiratory rate, pulmonary expansion far below the average, and diaphragmatic excursions of a very restricted type, without any evidence of pulmonary disease to account for it. These patients gave the impression of having established themselves at a pulmonary capacity—probably the mean of their already reduced respiratory need—so that their respiratory function could take place within a narrow range of respiratory excursions, and even at this point they needed only a reduced number of respiratory cycles. I found, however, that it was possible to correct this anomaly by a concentrated effort at deep breathing exercises carried out repeatedly, daily, over a period of several months. Considerable increase of spontaneous pulmonary expansion could be obtained in some cases after several weeks of conscientious breathing exercises. Reductions of blood pressure levels—an average of 30 per cent of the pathologic surplus—were thus obtained and maintained, in some of the cases for nearly two years. In some cases it was necessary to interrupt the patient's life work temporarily for the purpose of carrying out a successful regimen. I may add that none of the patients have thus far reached the point of normal respiratory expansion or normal blood pressure level. In some of the cases hypoventilation is still a marked feature, though improvement is noticeably progressing. Some of these patients had other symptoms associated with hypertension; especially were gastro-intestinal symptoms complained of, all of which yielded promptly to the treatment.

If the available data are to be correlated, one must first realize that physicians are as yet far from being able to integrate the pathologic and clinical sequence of events. These data, however, enable one to construct the broad outlines of a conception of the clinicopathologic course in the development of hypertension. I believe that this conception has sufficient theoretical basis; receiving, as it did, considerable practical confirmation, too, it warrants discussion and deserves serious consideration.

Hypertension is overwhelmingly the disease of the second half of life. In spite of the fact that little more than the increased blood pressure was known about it, it was felt that it represented more than a symptom. Physicians have always held that it was the expression of a fundamental change in the vital economy; it has always been considered a disease. As such, it was marked early as the disease of the involution period of life. It is also known that with the second half of life metabolic processes of the organism begin their down grade; they are beginning to slacken. Probably the great change in the internal secretions, the menopause, is responsible for this metabolic involution process, which cuts down the oxygen consumption of the organism. Respiratory function soon adapts itself to this reduction of the oxygen consumption, respiration becoming gradually restricted. Many of these individuals have a tendency to overfeed and thus enhance circulation, but even in those with normal circulation this is apt to continue on the same level even after the metabolic processes have slackened down. A disproportion between circulatory and respiratory function will thus arise, the first being considerably in excess of the latter. A condition of "relative hypoventilation" may thus be assumed to develop in middle life in a great number of persons destined to become hypertensive.

The mechanism by which such "relative hypoventilation" would start a chain of events leading to hypertension is, according to my conception, as follows: Normal pulmonary expansion entails a definite extent of capillarization—spreading out on a capillary area—of the blood entering the lungs with every heart beat. The greater the capillarization—pulmonary expansion—the greater will be the amount of blood momentarily contained within the lungs. As is known, a normal extent of capillarization maintains in the lesser circuit a blood depot amounting to about one fifth of the total volume of circulating blood. This depot function therefore serves the purpose of regulating the distribution of the circulating blood volume between the lesser and the greater circulations. Relative hypoventilation goes with reduced capillarization in the pulmonary circulation; it tends to interfere with the depot function of the lesser circulation and therefore profoundly disturbs distribution of the circulating blood volumes between the two circuits. The result of such a disturbance will first be felt by the arterial system, which must receive and take care of the overload of blood.

If one considers that this overfilling of the arterial system arises in persons who are stepping into the involution period of life, whose blood vessels are losing their capacity of adapting themselves to variations of their contents, all subsequent events become understandable. It is quite obvious that if such a condition of overfilling must be kept up constantly for any length of time, the effect of hypercirculation will be a tissue hyperplasia throughout the overloaded cardiovascular bed, from the left side of the heart to the smallest of arteries. The hypertrophy of the left side of the heart and the thickening of the arterial walls will progress in proportion to the gradually decreasing depot function of the lesser circuit; i. e., the increasing overload. Thus arises the "hypertonia of the vascular wall," which, as has been pointed out by Pal,[20] would in itself be sufficient to cause hypertension even if the cross-section of the vascular bed as a whole remained the same. The reason for this is found in the decreased vascular distensibility, which is caused by the thickening of the vascular wall. Janeway's second factor in the production of high blood pressure, increased peripheral resistance, is here. To overcome this, the left ventricle will go into still greater compensatory hypertrophy. Janeway's third factor, increased cardiac energy, steps in finally to close the chain. It is therefore logical to conclude that "relative hypoventilation" started a chain of events, a vicious circle, the consequences of which are growing in geometric proportions. It is also logical to conclude that cutting this vicious circle by increasing respiratory function will reestablish depot function in the lesser circuit and bring about proper distribution of circulating blood volumes between the two circula-

20. Pal, J.: Med. Klin. 24: 123 (Jan. 27) 1928.

tions. The result will be that, the greater circulation being relieved of its overload, the systemic blood pressure will decrease.

In a few final remarks the oxygen deficiency theory of Lintz and Mirtl can be disposed of. A great deal is known today about clinical conditions of chronic oxygen deficiency. There is nothing whatever in the clinical picture of hypertension even to suggest the presence of such a condition. The human body is endowed with pulmonary surfaces so prodigiously that no organ disproportion, such as is observed in hypertensive patients, could account for a genuine deficiency. That such a deficiency is not present becomes evident in the later phases of hypertensive disease. When things come to such a pass that the circulation becomes embarrassed and better arterialization of the circulating blood becomes necessary, the lungs of these patients are still capable of going into compensatory hyperfunction, and emphysema develops. Then the not infrequent clinical picture of combined emphysema and chronic hypertension is found. I venture to say that at this stage of the disease the blood pressure levels of such patients are already on the down grade. I am convinced that if hypertensive patients were observed during the period in which their emphysemas develop, the lowering of the former blood pressure levels could be observed. I have observed a large number of patients with tremendous enlargements of both sides of the heart, and with a definite history and all the earmarks of a foregone hypertension, in whom it was quite evident that the high blood pressures were reduced by the oncoming emphysema. Such patients are frequently considered to be in the decompensating phase of hypertensive disease; I have seen a few of them live comfortably for some years and finally develop signs of circulatory failure of the type due to chronic emphysema. On the other hand, I have also seen chronic cirrhotic forms of pulmonary tuberculosis lead to considerable hypertension by way of emphysema of the already greatly reduced pulmonary areas. It is evident that in the latter condition pulmonary destruction reduced the depot function of the lesser circuit, and the compensatory emphysema was insufficient to prevent the hypercirculation from extending into the greater circulation, while in the former condition existing hypercirculation was diminished by the reestablishment of the depot function in the lesser circuit.

CONCLUSIONS

Depot function of the lesser circulation is the principal factor in the regulation of pressure conditions prevailing in the systemic circulation.

Reduction of this depot function as caused by reduced respiratory function is probably the most important factor in the pathogenesis of chronic hypertensive disease.

Hyperventilation exercises carried out in the form of an intensive and prolonged training of deep breathing are capable of bringing about marked reductions of pathologically increased blood pressures.

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Pedantic Jargon.—We should throw into the discard of pedantic jargon or metaphysical psychology all such notions and terms as libido, regression, projection, introspection, inversion, introversion, extroversion, transference, foreconscious, ego-instincts, transposition, displacement, fixation, and the like, and return to the sound and common sense concepts and a nomenclature of straight psychology.—Prince, Morton: *J. Abnormal & Social Psychology*, January-March, 1929.

THE EFFECT OF QUINIDINE SULPHATE ON VENTRICULAR TACHYCARDIA

CLINICAL OBSERVATIONS *

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The effectiveness of quinidine sulphate as a means of abolishing auricular fibrillation has led to the use of this drug in the treatment of other forms of cardiac arrhythmia. We report here our experience in using quinidine in paroxysmal and persistent tachycardia of ventricular origin.

The action by which quinidine alters the mechanism in auricular fibrillation has been shown by Lewis and his co-workers [1] to depend chiefly on its tendency to break up a circus movement in the auricle. This occurs when the effect of quinidine in prolonging the refractory phase of auricular muscle predominates over its effect in slowing the rate of conduction of the rapidly circulating impulse. There is some reason to feel that the common forms of abnormal tachycardia may be due to a disturbance similar to that found in auricular fibrillations; i. e., to a circus movement. Particularly is this true of the rarer forms of tachycardia in which impulses arise in the ventricle. It is not yet established that the mechanism of ventricular tachycardia is a circus movement. If it were such, one might expect that quinidine would have the same tendency to abolish the tachycardia that it has in auricular fibrillation. In fact, this is the case. In 1922 Scott [2] demonstrated the specific effect of quinidine in preventing as well as stopping paroxysms of tachycardia of ventricular origin after digitalis, atropine, epinephrine and glyceryl trinitrate had all been tried without success. He furthermore showed that the effectiveness of quinidine in checking this arrhythmia was probably dependent on its property of lengthening the refractory phase of ventricular muscle. This action of quinidine was demonstrated experimentally in dogs at about the same time by Drury, Horsfall and Munly.[3] It is evident from the data presented here that these attacks of ventricular tachycardia yield to quinidine even more readily than does auricular fibrillation, and this fact along with experimental observations supports the assumption that this form of arrhythmia may be a circus movement.

It is interesting at this juncture to note some of the paradoxic points in regard to tachycardia of ventricular origin and its treatment with quinidine. In the first place, we know that this abnormal rhythm occurs in some of the gravest forms of heart disease. In eight of the ten cases here reported there was definite evidence pointing to coronary thrombosis. Robinson and Herrmann [4] reported four cases of ventricular tachycardia, one of which was proved to be a case of coronary occlusion and two others were thought to be of the

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1. Lewis, Thomas; Drury, A. N.; Iliescu, C. C., and Wedd, A. M.: Observations Relating to the Action of Quinidine upon the Dog's Heart, with Special Reference to Its Action on Clinical Fibrillation of the Auricles, Heart **9**: 55 (Dec.) 1921.

2. Scott, R. W.: Observations on a Case of Ventricular Tachycardia with Retrograde Conduction, Heart **9**: 297 (Dec.) 1922.

3. Drury, A. N. Horsfall, W. N., and Munly, W. C.: Observations Relating to the Action of Quinidine on the Dog's Heart: The Refractory Period of, and Conduction in, Venticular Muscle, Heart **9**: 365 (Dec.) 1922.

4. Robinson, G. C., and Herrmann, G. R.: Paroxysmal Tachycardia of Ventricular Origin and Its Relation to Coronary Occlusion, Heart **8**: 59 (Feb.) 1921.

same nature. These investigators stress the probable relationship of ventricular tachycardia and coronary disease, and call attention to the fact that dogs whose coronary arteries have been ligated very commonly develop ventricular tachycardia as a result of this manipulation. Major and Wahl [5] report a case of ventricular tachycardia in which focal inflammatory areas were found in the ventricular muscle, together with some disease of the coronary arteries. One of the cases reported by Butterfield and Hunt [6] which exhibited a ventricular tachycardia showed extensive changes in the interventricular septum with vascular connective tissue formation. In contrast, this arrhythmia occurs on rare occasions in young people in whom there are found no signs of heart disease and in whom the only cardiac symptoms present are those associated with the tachycardia; namely, palpitation, giddiness, faintness and, at times, mild dyspnea. Case 1 and the case reported by Scott [2] are instances of this. The patient reported by Jones and White [7] showed only slight cardiac enlargement, and at no time did he have any symptoms of heart failure. It is significant that whereas the form of arrhythmia that occurs in patients with badly affected hearts is looked on as a possible precursor of ventricular fibrillation and hence as a very serious disorder, it may occur in young people in whom there is no evidence of heart disease, and in whom ventricular fibrillation is not even considered as a likely complication.

In the second place, paroxysms of ventricular tachycardia in some instances have been induced by very slight exercise and in others exercise has abolished the attacks. Finally, quinidine, which is known to bring about cessation of these attacks, has also been thought to cause them. In treating patients with auricular fibrillation, Levy [8] secured in several instances electrocardiograms which he interpreted as showing ventricular tachycardia. His published curves are suggestive of defective conduction of supraventricular impulses. They do not fulfil all the postulates of ventricular tachycardia cited by Robinson and Herrmann,[4] although one case looks much like a real instance of this arrhythmia.[9] Other writers, including Lewis [10] and Oppenheimer and Mann,[11] note the possibility of ventricular tachycardia developing in cases of auricular fibrillation treated with quinidine and consider this development an indication for the immediate discontinuance of the drug. All of these paradoxic observations stress the fact that our knowledge of the exact cause and nature of ventricular tachycardia and the rôle of quinidine in its treatment is still very limited.

However dangerous the procedure may be considered, a number of cases of ventricular tachycardia have been successfully treated with quinidine when other means of therapy were of no avail. In the case cited by Scott [2] the patient was made free from her attacks and remained so on a daily dose of 0.2 Gm. Cases similarly treated have been cited by Barrier,[12] Gilchrist,[13] Jones and White [7] and Wolferth and McMillan.[14] We report here the case histories of ten patients treated in the hospital or by one of us in private practice. All of these patients received quinidine either by mouth or intravenously. In eight of them it produced a specific return to a normal mechanism. In one of the others there was temporary slowing of the heart rate, and in the last one no effect was produced. The patients were all over 40 years of age. There were eight men and two women. In one instance (case 1) there was no evidence of organic heart disease. In another (case 2) the patient had chronic cardiac valvular disease with mitral stenosis. The remaining eight were suffering from coronary thrombosis. In these the ventricular tachycardia first appeared at intervals varying from twelve hours to fourteen days from the time of their acute attack following coronary occlusion. Though seven of the patients died, in none of them did we feel that death was the result of quinidine intoxication. In fact, quinidine had been entirely discontinued for some days in most of the instances before death occurred. One patient died of lobar pneumonia, one of a cerebral embolus, another of rupture of the heart, and the remaining four of coronary thrombosis.

There are two points that should be noted here. In the first place, ventricular tachycardia, when occurring as a complication of coronary thrombosis, in itself a grave condition, presents a very serious situation. It is obvious in such instances that the severely injured heart cannot maintain for long a rate of from 150 to 200, so that anything that can be done to favor the return of a normal rhythm is worthy of trial. The gravity of the condition warrants the risk of giving a drug which we know is dangerous but which at the same time may be life-saving. Secondly, at times it may be necessary to give the drug in very large doses to secure and maintain the desired effect. The exact dosage is a variable matter and must be determined by trial and error. We usually begin with 0.3 Gm. of quinidine sulphate and repeat the dose every four to six hours, raising it 0.1 or 0.2 Gm. each dose or in urgent cases even more rapidly. In one instance (case 6) it was necessary to give 1.5 Gm. five times within twenty-four hours before a normal rhythm was established, less than this amount being ineffective. After the return of the normal rhythm the patient is kept for a variable length of time on 0.2 or 0.3 Gm. three times a day or oftener if necessary. In case 2 it was found after repeated trials that a daily dose of 2.4 Gm. was necessary to maintain a slow heart rate and the patient was able to continue on this dosage for months without ill effect. The amount necessary must be determined according to the individual's reaction and condition.

Obviously this method of treatment would have a very limited use if the disturbance for which it is given could not be recognized at the bedside. Whereas formerly it was thought that ventricular tachycardia could be identified only by electrocardiographic means, there are now available simple criteria that can be applied by any practitioner in the sickroom.[15] The three points that distinguish ventricular tachycardia from other

5. Major, R. H., and Wahl, H. R.: Paroxysmal Tachycardia Associated with Focal Myocarditis, J. A. M. A. **86**: 1125 (April 10) 1926.
6. Butterfield, H. G., and Hunt, G. H.: Observations on Paroxysmal Tachycardia, Quart. J. Med. **7**: 209 (April) 1914.
7. Jones, T. D., and White, P. D.: Paroxysmal Ventricular Tachycardia: Report of an Unusual Case, Am. Heart J. **2**: 139 (Dec.) 1926.
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forms of rapid heart action are: First, the rhythm is rapid and is essentially regular but slight irregularities can be detected. Second, the quality of the first heart sound varies in intensity in some of the cycles. Third, attempts at vagal or ocular pressure prove ineffective in slowing the tachycardia.

These clinical experiences, which are detailed in the accompanying case histories, seem to prove quite conclusively that quinidine sulphate has a most beneficial

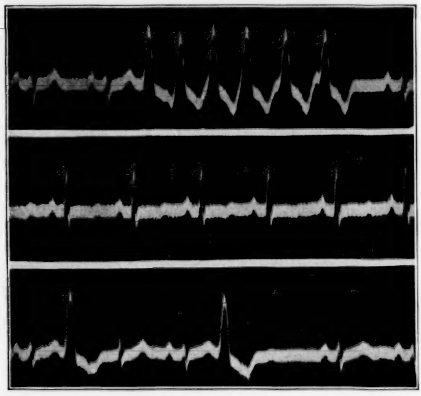

Fig. 1 (case 1).—First tracing shows a short paroxysm of tachycardia made up of consecutive extraventricular systoles; note the regular and independent P waves. Middle tracing shows complete disappearance of the irregularity under quinidine. Lower tracing shows return of occasional extrasystoles under insufficient quinidine.

effect that is almost specific in abolishing and inhibiting the rapidity of the beat due to the ventricular tachycardia. When this disturbance in the heart's mechanism develops in patients who have nothing or very little wrong with the structure of the heart, the quinidine can serve to regularize the rhythm and thus do away with palpitation, which may be either annoying or even incapacitating. When the tachycardia occurs in coronary thrombosis, quinidine will be effective in controlling only this particular complication of the disease. Because the underlying condition here is most grave and is frequently followed by disastrous complications, such as heart failure, embolus formation or rupture of the heart, and because it is of itself often fatal apart from the development of ventricular tachycardia, it would not be expected that all or even most patients would recover. It has been our impression that ventricular tachycardia occurs in the more severe instances of coronary thrombosis. The clinical experience in which one sees a moribund patient improve abruptly and most dramatically after the return to normal rhythm following quinidine is sufficient evidence of its great therapeutic value.

REPORT OF CASES

CASE 1.—E. B., a woman, aged 41, complained chiefly of fluttering of the heart. At the age of 32 she had had influenza, at which time the heart beat was quite irregular. Her physician had her keep an ice-bag over the precordium. Four years later she began to have a good deal of nervous indigestion and with it the heart "thumped dreadfully." This continued for a while and then disappeared. During the past year, as the result of caring for her invalid mother, the patient became nervous again and the palpitation of the heart returned. She did not have any dyspnea, cough, chest pain or nocturia. She had never had rheumatic fever, chorea or scarlet fever, although she had diphtheria at the age of 7. The family history was not remarkable. An examination, April 11, 1927, showed her to be well developed. The lungs and the abdomen were normal. The blood pressure was 122 systolic and 96 diastolic. The heart was not enlarged. There were no murmurs. The action was irregular. Frequent runs of rapid regular beats were heard (fig. 1), then sudden pauses with a normal regular rhythm and occasionally single extrasystoles. There was no peripheral edema. The urine was normal. At this time the patient was told that she was not suffering from any serious disease, but merely that she had a nervous irregular beat. She was not given any medication. One month later she was again examined and the condition was found to be exactly the same. Palpitation was continuously troubling her. May 13, she began taking 0.4 Gm. of quinidine sulphate three times daily. On the second day of this treatment, all palpitation disappeared (fig. 1). The following month the dose of quinidine was reduced to 0.2 Gm. three times daily and the palpitation returned to some extent (fig. 1). She then took the larger dose and the heart action was regularized. In this case there was no doubt as to the specific controlling influence of quinidine on the irregularity of the heart.

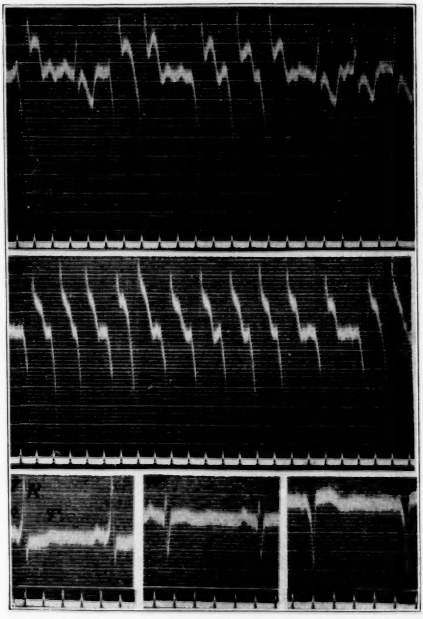

Fig. 2 (case 2).—First tracing (lead III) shows auricular fibrillation (f-f) and ventricular tachycardia (Vx) note occasional supraventricular beats (V); rate, 144. Middle tracing (Lead III) shows rapid ventricular tachycardia; rate, 183; note absence of supraventricular beats and increased rate as the result of digitalis. Third set of tracings shows three leads with a normal heart mechanism.

CASE 2.—A. L., a man, aged 48, complained chiefly of shortness of breath. There was no previous history of chorea, rheumatic fever or tonsillitis. At the age of 21, he fell to the floor after strenuous physical exertion and noticed then for the first time that his heart was beating rapidly and irregularly. Following this he had no unusual symptoms except that his heart often seemed to beat peculiarly when he was troubled

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with coryza or pharyngitis. At such times he was mildly dyspneic. For the past few years the patient experienced increasingly frequent attacks of nocturnal dyspnea, lasting usually one-half hour, and ending gradually. Severe coughing, productive of mucus, accompanied these attacks. For several weeks before examination there had been attacks of stabbing pains low down in the left side of the chest unrelated to exercise or emotion. One severe attack of "fluttering" and dyspnea ten days before admission had been uninfluenced by full doses of digitalis. An examination, May 27, 1925, showed him to be somewhat overnourished and slightly dyspneic. The heart was moderately enlarged and showed an irregular rhythm, a rate of about 150, a faint apex impulse, and a slight apical thrill apparently systolic in time. The first heart sound had a rumbling quality. No definite murmurs were heard. Electrocardiograms (fig. 2) showed auricular fibrillation and ventricular tachycardia. The lungs showed a few congestive râles, and the liver was enlarged. Otherwise the examination was not significant. The blood pressure was 90 systolic and 80 diastolic. On 2.7 Gm. of digitalis given during eight days, the heart rate increased with a wide pulse deficit. Electrocardiograms (fig. 2) showed a rapid ventricular tachycardia and a rate of 183, without supraventricular beats. Numerous tracings taken during this time showed that auricular fibrillation continued. On the eleventh day the patient was started on quinidine sulphate, 0.2 Gm. being given twice; thereafter each dose, given three times a day, was increased 0.1 Gm. daily until he received 0.8 Gm., when the rhythm was found to be regular, the rate 73 and the electrocardiogram normal (fig. 2).

Examination at this time revealed evidence of mitral stenosis. The maintenance dose was not known, but it was found that while 0.6 and 0.7 Gm. were given three times a day, the rapid ventricular rate still returned. On 0.8 Gm. three times daily the slow normal rate was satisfactorily maintained and the patient continued on this dosage without ill effect. He resumed his position and continued to work until April, 1926, when he contracted lobar pneumonia which resulted fatally. At the time of the last entry the heart action was slow and regular. Autopsy showed lobar pneumonia and mitral stenosis.[16]

CASE 3.—A. D., a man, aged 64, seen in consultation at his home, Jan. 28, 1927, because of a severe heart attack, had had a somewhat similar, but much less severe, spell three years before. For the past six weeks he had had sternal constriction on walking. He had had mild diabetes for ten years. Thirty-four hours before he was seen, after unusual effort and excitement, he felt a terrible pressure over the sternum "like a load of 2 tons on the chest." He broke out into a cold perspiration; there was a feeling as if the heart were bursting. On examination the patient appeared muscular and slightly cyanotic. The heart was slightly enlarged, the sounds were distant, the action was regular and the rate was 110. There was a very slight apical systolic murmur. Many râles were heard at both bases. There was slight liver tenderness in the epigastrium. The blood pressure was 102 systolic and 80 diastolic. The temperature was 101 orally and 103 rectally. The whole picture was typical of coronary thrombosis. During the following few days his physician noted on several occasions a rapid, irregular heart action, with the rate about 150, which disturbance must have been transient, as during the intervals the rate was always 110 and regular. The patient was given full doses of digitalis, but his condition had grown distinctly worse. He became irrational and had to be catheterized and the pulse at times was almost imperceptible. The blood pressure reading was 80 systolic and 70 diastolic.

February 2, when the patient was seen by one of us, the heart rate was found to be 155; the action was regular with an occasional skipping. At this time the exact type of the disturbance of the mechanism of the heart was not known. At first it was thought to be due to auricular flutter, and therefore more digitalis was given intramuscularly without any effect. February 5, when it was found that the condition was unchanged, the question arose whether the extremely rapid rate was due to digitalis poisoning, producing complete heart block with rapid ventricular rate. One such case we had previously seen. It suddenly became apparent that the disturbance was most likely a paroxysmal ventricular tachycardia, for there were slight irregularities in the rhythm, which was otherwise very regular. The quality of the first heart sound varied at times, and repeated attempts at vagal and ocular pressure failed to stop the tachycardia. Finally, digitalis was in no way helpful, as one might have expected, for digitalis is ineffective in controlling ventricular tachycardia. The patient was then given 0.3 Gm. of quinidine sulphate by mouth, repeated for three doses at three hour intervals without any effect. February 7, he was given 0.6 Gm. of quinidine intravenously, whereupon the heart slowed from 151 to 120 in one minute. The effect, however, was only temporary, the rate returning to 150. Further quinidine treatment was discontinued. The heart beat remained rapid throughout; the patient gradually grew worse and died, February 10.

There is very little doubt that the rapid rate here was due to paroxysmal ventricular tachycardia. Had this diagnosis been made in time and had we known that under such circumstances

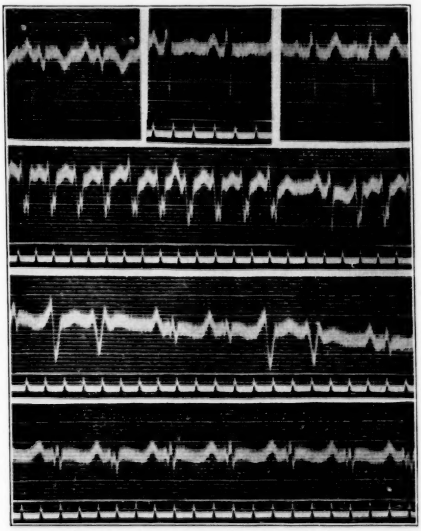

Fig. 3 (case 6).—First set of tracings shows three leads taken two weeks after the onset of an attack of coronary thrombosis; note sharply inverted dipped T_1. Second tracing shows rapid ventricular tachycardia interrupted with one normal beat. Third tracing shows frequent abnormal ventricular beats indicating a partial effect of the quinidine on the irregularity seen in the second tracing. Last tracing shows complete restoration of the normal rhythm on large doses of quinidine.

extremely large doses of quinidine, such as 1.5 Gm. at a time, might be necessary to restore the regular rhythm, the patient's life might have been saved, as illustrated by case 6.

CASE 4.—H. L., a man, aged 56, seen at his home in consultation, March 3, 1927, had had sternal pain radiating to the left arm on effort for the previous two months. Forty-eight hours before examination, while delivering an address, he was taken with a sudden pain in the upper part of the abdomen and the lower part of the chest radiating to the back. His physician found him pulseless, could not hear any heart sounds and thought that he was dead. Epinephrine, 1.3 cc., was administered intramuscularly, and shortly afterward the pulse returned. When the patient revived he complained of pain in the left arm.

On examination he appeared to be in a moderate state of shock. The blood pressure was 84 systolic and 50 diastolic. The temperature was 97.8 orally and 101 rectally. The heart was essentially normal. The rate was 104. Numerous râles were present at both bases. The urine contained a considerable amount of sugar. Several days later a pericardial friction rub

16. Levine, S. A., and Curtiss, A. N.: A Case of Ventricular Tachycardia and Auricular Fibrillation: An Unusual Problem in Therapy, Am. Heart J. **1**: 413 (April) 1926.

was heard and on another occasion partial heart block developed. The patient gradually improved and began to do very well. The pain and distress had all disappeared, the heart rate was around 90, and there was no glycosuria or evidence of congestion. April 16, the heart rate was suddenly found to be rapid, having risen to 171. The rhythm was regular with very slight changes in the length of the cycles at times. The first heart sound varied in intensity; the vagal pressure did not produce any slowing. The pulse rate was 70. The blood pressure was 85 systolic and 70 diastolic. There was Cheyne-Stokes breathing. A diagnosis of paroxysmal ventricular tachycardia was made. The patient was given increasing doses of quinidine sulphate by mouth, beginning with 0.3 Gm. and increasing to 0.5 Gm. The following day, on the latter dose, the heart rate returned to 90. The drug was omitted and on the next day the rapid rate returned. He was then given 0.5 Gm. three times daily, and the normal rhythm was reestablished. This was continued for four days and then entirely omitted, as

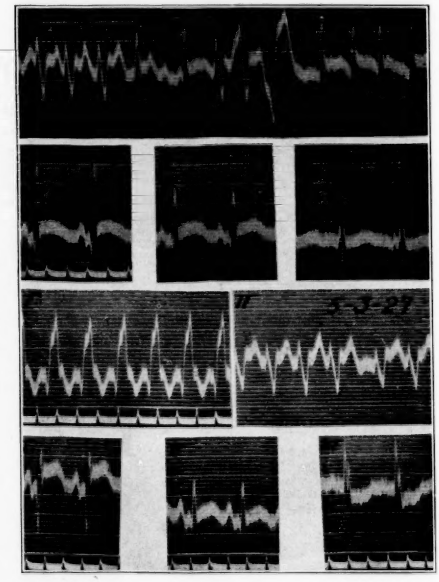

Fig. 4 (case 7).—First tracing, taken four days after onset of attack of coronary thrombosis, shows auricular fibrillation with occasional extraventricular systoles. Second set of tracings shows normal rhythm; the T waves in leads I and II have the characteristic high take-off. Third set of tracings shows a paroxysm of ventricular tachycardia. Last set of tracings shows return to normal rhythm following quinidine.

the patient was feeling fairly well. April 26, after a period when no medication at all was being given and when the condition seemed very satisfactory, so that he was expected to sit in a chair for the first time, the patient suddenly died. In this case the quinidine was effective in restoring the normal rhythm, although some days later sudden death occurred which may have been due to rupture of the heart.

CASE 5.—S. D. L., a man, aged 61, was seen at his home in consultation, Sept. 1, 1927. A few months before this attack he had had dyspnea on walking. Three weeks before, after a period of two strenuous weeks spent in cruising and yacht racing, he had had a severe pain in the chest which lasted two days. It felt "like a ton of weight" on the chest. After this a pericardial friction developed with a temperature that ranged from 99 to 102 and lasted for two weeks. In the past week Cheyne-Stokes breathing was noted. About three hours before the patient was seen he went into collapse and became agitated, violent and delirious. The pulse rate was thought to be normal, but on careful auscultation the heart rate was found to be 204. The sounds were distant and the rhythm was regular with slight pauses. The situation seemed fairly clear. The patient had had an attack of coronary thrombosis beginning three weeks before and the present attack of collapse was due to the inception of paroxysmal ventricular tachycardia. Six-tenths gram of quinidine sulphate in solution was forcibly poured down the patient's mouth and in about twenty minutes a most striking change in his condition occurred. The heart rate was now 108, and all beats reached the wrist. The active delirium, terrific air hunger and dyspnea, and the tremendous agitation all disappeared in a most dramatic way and the patient fell back in a peaceful sleep. The heart rate remained about 100 and was perfectly regular after this. The following day a sudden hemiplegia occurred; the patient became unconscious and died very peacefully, September 3. Here, again, quinidine had a most beneficial and specific effect in restoring the normal rhythm and improving the circulation. Death was most likely due to the cerebral embolus following the dislodgment of a portion of the left ventricular mural thrombus. This is a common accident in coronary thrombosis, even when ventricular tachycardia does not occur.

CASE 6.—A. R., a man, aged 53, three hours before he was seen in consultation at his home, March 24, 1927, was taken with a terrific attack of pain in the center of the chest radiating to both arms. He vomited once. The pain continued. On examination he was found to be in a cold perspiration. The blood pressure was 158 systolic and 110 diastolic. The heart sounds were very distant. There was a gallop rhythm, with a rate of 124. The diagnosis was obviously coronary thrombosis. The patient had already had one-fourth grain (16 mg.) of morphine hypodermically and another half grain (32 mg.) was given directly before he was taken to the hospital. During the first week in the hospital the course was the usual one of a severe coronary thrombosis. He had almost continuous chest pain and difficulty in breathing. The temperature ranged from 100 to 102. The blood pressure fell to 97 systolic and 74 diastolic. The heart was regular, with a rate of 100 (fig. 3). April 7, the patient had an attack of transient auricular fibrillation, during which time there was considerable prostration. The following morning the heart was suddenly found to be very rapid, with a rate of 198. The rhythm was essentially regular with slight detectable irregularities, and occasionally the intensity of the first heart sound changed. A clinical diagnosis of ventricular tachycardia was made, which was confirmed by electrocardiograms (fig. 3). The pulse was so feeble that no blood pressure could be obtained. The condition seemed desperate. It was decided to inject 0.3 Gm. of quinidine intravenously. This, however, did not produce any effect and the tachycardia persisted. Increasing doses of quinidine were then given by mouth, and when the dose of 1.2 Gm. was reached a slight slowing of the heart beat occurred (fig. 3). The patient was then given 1.5 Gm. five times daily and the normal rhythm was established (fig. 3). The drug was then omitted and the tachycardia returned. The patient was therefore given 1 Gm. four or five times a day for about five days. Normal rhythm was reestablished and there was no return of the irregularity even after quinidine was omitted. The improvement in the patient's general condition was striking and after a prolonged convalescence he recovered and became ambulatory. This case illustrates quite decisively the specific effect of quinidine on ventricular tachycardia. Here therapy seemed to be life-saving, as the patient was fortunate enough not to develop any of the other complications of coronary thrombosis.[17]

CASE 7.—T. R. K., a man, aged 55, for a year before the present attack had been treated for hypertension. He had complained only of dyspnea on mild exertion. April 27, 1927, following slight exertion, he was suddenly taken with severe epigastric pain and weakness, and several hours later with dysp-

17. Levine, S. A., and Stevens, W. B.: The Therapeutic Value of Quinidine in Coronary Thrombosis Complicated by Ventricular Tachycardia, Am. Heart J. **3**: 253 (Feb.) 1928.

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nea and a sense of constriction over the heart. In the course of forty-eight hours the systolic pressure fell from 220 to 148. The heart showed a questionable friction rub just outside the apex, a gallop rhythm and a rate of 120. The temperature had risen to 101. There were moist râles at both bases. On the evening of April 30, the heart rate was found to be 168 and totally irregular. The blood pressure was 112 systolic and 84 diastolic. The diagnosis was quite plainly coronary thrombosis, and an electrocardiogram (fig. 4) showed the arrhythmia to be auricular fibrillation and paroxysmal ventricular tachycardia. The patient was given 1.2 Gm. of quinidine sulphate by mouth, divided in four doses, over a period of ten hours. One-half hour after the last dose the heart rate was found to be 126, and electrocardiograms showed a sinus rhythm with abnormal ventricular complexes (fig. 4). Quinidine was discontinued after one more dose of 0.4 Gm., and the rhythm remained regular at the rate of from 120 to 130 throughout the day. On the morning of the following day (May 3) it again rose rather gradually to 200 with an apparently regular rhythm. Electrocardiograms at this time (fig. 4) showed ventricular tachycardia. The pulse was barely perceptible, the rate being 130. The patient was given 0.4 Gm. of quinidine by mouth, which was followed within an hour by a rapid and progressive fall in the rate to 124, all of the beats being felt at the wrist. There had been a return of the normal mechanism (fig. 4). During the course of the next two days he did not receive any quinidine, and there were short periods when the rate rose to 192, with a prompt return to 120. Oxygen was administered to relieve the cyanosis. May 7, while the condition was apparently progressing favorably, the patient suddenly became very dyspneic and pulseless, and died five minutes later. Autopsy showed complete occlusion of the left coronary artery with a large infarct involving the tip of the left ventricle, which had ruptured. In this instance quinidine was effective in controlling the heart mechanism but the patient died of rupture of the heart.

CASE 8.—E. L. H., a man, aged 51, for three months before examination had noticed weakness and dyspnea on effort. One week before admission to the hospital, Nov. 7, 1927, he had had a "quart of red fluid" removed from the right side of the chest. There was no history of an acute upset, of chest pain or of palpitation. On examination the patient did not appear to be in any distress. The heart was moderately enlarged, with a rapid apparently regular rhythm; there were very faint heart sounds, and a to and fro friction rub was heard near the apex. The blood pressure was 74 systolic and 60 diastolic. There were râles at the bases of both lungs, with signs of fluid in the right pleural cavity. The liver was enlarged and tender; there was moderate pitting edema of both legs. Electrocardiograms at this time (fig. 5) showed a ventricular tachycardia with a rate of 153. The patient was given digitalis, on which he seemed to improve. The heart mechanism, November 11 (fig. 5), showed a sinus rhythm with defective intraventricular conduction. During the first twelve days the heart rate varied between 100 and 150, and toward the end remained persistently at the rapid rate. The blood pressure rose to 90 systolic and 65 diastolic. November 16, the patient was found again to have a ventricular tachycardia (fig. 5), the ventricular rate being 158; the auricular, 103. The heart sounds were faint and varied in intensity. Digitalis was discontinued and two days later the patient was started on quinidine. The first day he received 1 Gm. in divided doses; the next day 0.8 Gm. at noon and 1 Gm. at 5 p. m. Within two hours after this last dose, the rate fell from 152 to 96 and he experienced a feeling of much easiness in the chest. Quinidine was continued, the dose gradually being diminished to 0.3 Gm. three times daily. November 23, he again showed a rapid rate with electrocardiographic tracings revealing ventricular tachycardia. During this time the blood pressure had risen to 105 systolic and 80 diastolic and the patient showed definite clinical improvement. After a second dose of 0.8 Gm. of quinidine, the heart again became regular and remained so on a dose of 0.5 Gm. four times a day. Electrocardiograms, November 27, showed a slow and regular sinus rhythm with defective intraventricular conduction (fig. 5). The condition appeared to be progressing favorably and the patient felt better when, on the afternoon of December 1, he complained of nausea and a peculiar sensation about the heart and within two minutes suddenly collapsed and died. Autopsy revealed an old infarct on the posterior wall of the left ventricle, 4 cm. in diameter, with a small fresh infarction just above it. There was occlusion of the circumflex branch of the left coronary artery. This case illustrates the usual effective control of ventricular tachycardia by quinidine. Here, one previous attack of tachycardia that had lasted several days ended, and recurred while digitalis was being taken.

CASE 9.—C. M., a man, aged 55, the evening before admission, April 14, 1928, shoveled about a half ton of coal without suffering any ill effect. At 1 a. m. he was awakened by a violent constricting pain in the upper part of the abdomen and by a sense of something being "stuck" in the throat. He felt his heart going very fast and had difficulty in breathing. At 5 a. m. he was admitted to the surgical service with a diagnosis of perforated peptic ulcer. He refused operation, and when

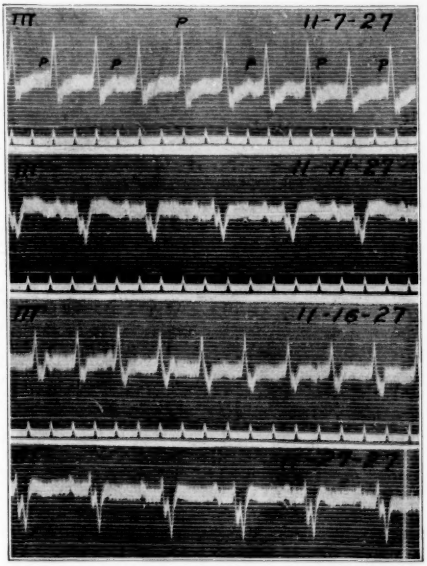

Fig. 5 (case 8).—First tracing shows ventricular tachycardia with independent auricular rhythm; ventricular rate, 153; auricular rate, 114. Second tracing shows normal rhythm. Third tracing shows return of ventricular tachycardia, which was persisting for days. Last tracing shows return of normal rhythm as result of quinidine.

seen by one of us he was found to have a heart rate of 160. The heart sounds were feeble, slightly irregular and of varying intensity, and there could be heard a definite to and fro friction. The diagnosis was quite obviously coronary occlusion and the rapid rate was considered to be a ventricular tachycardia. Unfortunately it was impossible to confirm this by electrocardiogram. The patient was given 0.4 Gm. of quinidine sulphate at 6 p. m., and 0.6 Gm. at 10 p. m. Sometime between 11:30 p. m. and 1:30 a. m. the heart rate fell from 140 to 92. He was put on a maintenance dose of 0.2 Gm. of quinidine sulphate three times a day, but two days later he was again found to have a heart rate of 140. Within a few minutes after a dose of 0.6 Gm. the rate fell abruptly to about 80 and remained slow and regular. He continued taking 0.3 Gm. of quinidine sulphate for five days with no return of the tachycardia. The patient made an uneventful recovery and was discharged somewhat against our advice four weeks after admission, in good condi-

tion. Though the arrhythmia was not proved by electrocardiogram to be ventricular tachycardia, its occurrence in an obvious case of coronary thrombosis, the characteristic varying intensity of the heart sounds and the slight irregularity, and its prompt cessation with quinidine leave little doubt as to the diagnosis. This illustrates the favorable effect of quinidine on ventricular tachycardia in a patient with coronary thrombosis who made a most satisfactory recovery.

CASE 10.—M. F., a woman, aged 50, who had previously been very well, nine days before admission had a sudden attack of precordial and epigastric distress associated with vomiting and some shortness of breath. Vomiting had continued. The patient complained that her heart was "throbbing" but she had not had any real pain. Physical examination showed moderate cardiac enlargement, a rate of 180, and heart sounds of varying intensity. There were a few crepitant râles at the bases of the lungs, slight edema of the ankles was noted, and the blood pressure was 110 systolic and 80 diastolic. Electrocardiograms showed a ventricular tachycardia with complete dissociation of auricular and ventricular complexes. Vagus and ocular pressure did not have any effect on the cardiac rate. The patient was started on 0.3 Gm. of quinidine sulphate and the dose was increased by 0.1 Gm. at four hour intervals throughout the day, until she was receiving 0.8 Gm. Electrocardiograms taken the day after admission showed a ventricular rate of 200 and an auricular rate of 100. The patient failed rapidly and died two days after admission. Autopsy was not permitted. In this case quinidine sulphate in doses up to 0.8 Gm. failed to produce any slowing of the heart; in fact, there was a slight acceleration.

SUMMARY

1. Clinical experience in ten cases showing ventricular tachycardia indicates that quinidine sulphate has in most instances a specific effect in restoring a normal rhythm.

2. Ventricular tachycardia occurs occasionally in patients who have no organic heart disease but more commonly in those with coronary thrombosis. Although quinidine does not have any effect on the other complications of coronary thrombosis, such as rupture of the heart or production of emboli, its beneficial influence on ventricular tachycardia is most dramatic and may be life saving.

3. It is highly probable that ventricular tachycardia is of the nature of a circus movement like that of auricular flutter and auricular fibrillation, and that the effect of quinidine is similar in all these conditions.

270 Commonwealth Avenue.

Contributors to Medical Science.—In the field of medical and vital statistics two remarkable men, John Graunt (1662) in his famous "Bills of Mortality" and William Farr (1839-1880) in his collected studies in "Vital Statistics" (1885), outlined the principles and indicated the methods on which modern public health bookkeeping is based. In two other branches of preventive medicine most substantial advances were made—tropical medicine and mental hygiene. In the former, Laveran, in 1880, by his discovery of the causative agent of malaria, and Sir Ronald Ross, in 1897, in establishing the mode or transmission of the disease, made possible the elaboration of procedures for its control. In 1901 the Commission on Yellow Fever of the Medical Corps of the United States Army, consisting of Reed, Carroll, Lazear and Agramonte, by heroic and self-sacrificing experiments elucidated the fact that yellow fever is also an insect-borne disease. Other outstanding contributors in this field are Sir Patrick Manson, who in 1879 first proved that insects serve as the vectors of parasites which cause human disease; Sir David Bruce, Leishman and Fritz Schaudinn, who also discovered the spirochete of syphilis. These are but a few of the contributors to medical science whose work has made life in the tropics possible for the white man.—Fitzgerald, J. G.: Some Aspects of Preventive Medicine, *Canad. M. A. J.*, February, 1929.

INTESTINAL PARASITISM SIMULATING APPENDICITIS *

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PHILADELPHIA

Intestinal parasitism is commonly manifested by a collective group of symptoms and pathologic lesions of such a varied degree of intensity that the recognition of these disorders is often rather uncertain. Parasitic diseases, with few exceptions, have an indefinite period of incubation, their course commonly is protracted over a long period and they have, as a rule, an uncertain termination. Such is amebic dysentery, which commonly is manifested by the acute symptoms of frequent defecation, tenesmus, and mucous or bloody discharges. Not infrequently these acute symptoms may not appear until some time later in the course of the disease, or may be entirely wanting when the disturbance is mild in character. Nevertheless, the disease follows its normal course of ulceration of the mucosa of the colon, to be manifested later in the form of a diffuse and rather indefinite form of colitis.

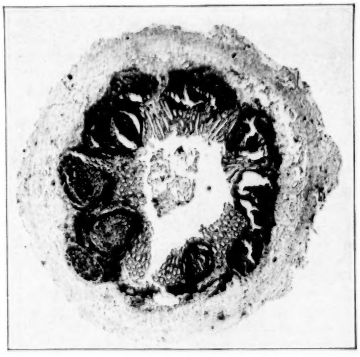

Fig. 1.—Section of Oxyuris vermicularis in lumen of the appendix.

Certain parasites, such as *Oxyuris vermicularis*, which commonly inhabits the appendix and the large intestine, may give rise to rather obscure symptoms in these regions and the same is true of *Trichuris* (*Trichocephalus*), or whipworm, which inhabits the cecum and may cause a chronic, indefinite form of catarrhal typhlitis and appendicitis.

Infestation with *Ascaris lumbricoides*, affecting especially children, does not manifest any definite symptoms on which one may base a certain diagnosis. This can easily be made, however, by the finding of the eggs in the feces. This parasite has more or less a wandering habit through the whole extent of the small intestine, and its presence in the lower part of the ileum and eventually in the cecum or appendix may be manifested by symptoms more or less localized in the appendicular region, resembling appendicitis.

A rather interesting phase in the symptomatology of intestinal parasitism is illustrated by schistosomiasis, a disease caused by *Schistosoma mansoni, S. japonicum*

* Read before the American Society of Tropical Medicine, Washington, D. C., May 1, 1928.

† From the Division of Medical Zoology and Tropical Medicine, Department of Pathology, University of Pennsylvania School of Medicine.

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and *S. hæmatobium*. These are blood parasites found in the inferior vena cava, the mesenteric vein, and the hemorrhoidal plexuses of the rectum and the bladder, respectively. Since the eggs of these parasites are discharged into the blood stream, they may be carried to any part of the body, including, of course, the appendicular region.

Fig. 2.—Eggs of Oxyuris vermicularis in section of the parasite in appendix (high power).

Figure 6 shows the lodgment of *Schistosoma* eggs in the mesenteric lymph nodes of the pelvis and the pelvic portion of the ureters, as well as in the blood vessels of the cecum and appendix. The lodgment of the eggs in these localities, as is readily understood, may be the source of mechanical irritation giving rise

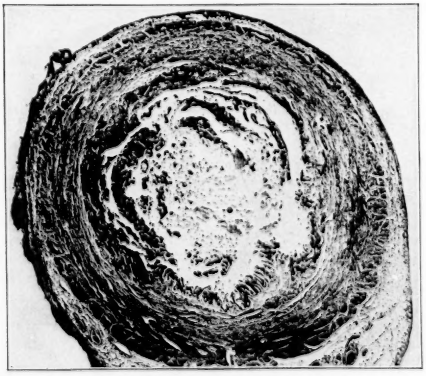

Fig. 3.—Ulceration of mucosa in amebiasis of the appendix (low power).

to symptoms simulating in all respects chronic appendicitis, more especially if the eggs happen to be lodged in the region of the appendix.

Acute appendicitis, as classically understood, is an acute bacterial infection which calls for immediate operation in order to avoid its fatal spread to adjacent structures. Besides this, however, there are the subacute and chronic types of appendicitis in which immediate operation is not only unnecessary but often undesirable and certainly should never be performed before a more careful study of the situation has been made.

Subacute or chronic appendicitis may result from various causative factors, among which parasitic infestation of this organ is rather more common than is generally conceded. It should be added here that parasitic infestation of this organ is usually, if not always, a secondary manifestation, because infestation of the cecum and other portions of the large intestine or the lower portion of the small intestine is in nearly every case the primary seat of the infection.

To go into a lengthy discussion of the secondary manifestations of intestinal parasitism would be out of place here. Suffice it to say that extensive ulceration of the large intestine, either in part or in toto in amebic dysentery, is of common occurrence. Appendectomy, common and fashionable as it may be, is nevertheless a serious operation, the performance of which, unless absolutely necessary, is certainly to be avoided, and to perform this operation, except under dire necessity, in cases of ulceration of the cecum or colon, is, to my

Fig. 4.—Amebas in lymph spaces and submucosa in amebiasis of the appendix (high power).

mind, inexcusable. It is needless to point out that in such cases the formation of adhesions is greatly favored, to say nothing of the possibility of the operative procedures inducing a fatal peritonitis.

So much for the danger to which the patient is exposed in such circumstances. There is also another phase of the situation, of almost equal importance, which has to do with the prognosis of such cases and indirectly with the reputation of the surgeon. It can be appreciated that the removal of the appendix in cases of intestinal parasitism is never a cure and only in rare cases does it alleviate any of the symptoms. It is for this reason that conscientious prognosis can be based only on a more careful diagnosis.

If care is taken in the preoperative examination, an operation may be avoided; or, in case it is found necessary, the patient should be given to understand that while he has appendicitis he also has intestinal parasitism, and although an operation is advisable in order to avoid possible immediate complications, it will not necessarily rid him of the symptoms. In this way a great deal of unpleasantness to the patient, the surgeon and every one concerned can easily be avoided.

In acute appendicitis there may not, of course, be any choice and operation is the logical procedure; but in subacute or chronic cases there are a few salient points to be remembered: Diarrheas, or other manifestations common to intestinal parasitism, absence of fever, mild leukocytosis and indefinite localization of pain should put the surgeon on the lookout for intestinal

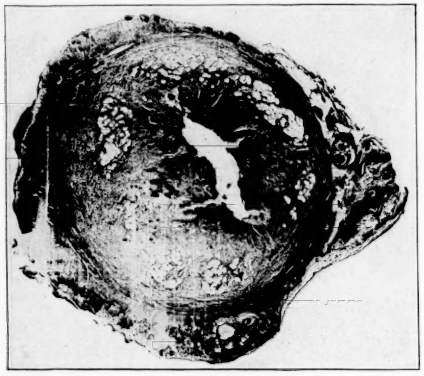

Fig. 5.—Clusters of eggs of Schistosoma haematobium in schistosomiasis of the appendix.

parasites, and while careful clinical and laboratory study is advisable in all cases, it should be more especially considered when such symptoms are noticed.

The preoperative procedure in all subacute or chronic cases of appendicitis should include:

1. Examination of the feces for intestinal parasites, whether in the vegetative or encysted form of protozoa, or as the eggs, larva or adult forms of metazoa.

2. Proctoscopic examination of the colon for ulceration.

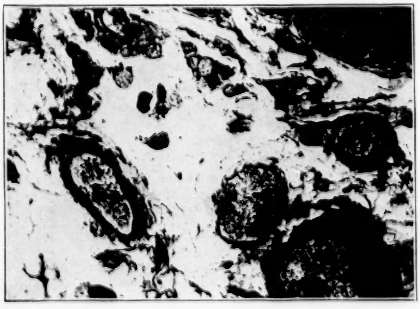

Fig. 6.—Schistosomiasis of mesentery lymph nodules in the region of the appendix, showing eggs of Schistosoma in the tissue (low power).

3. Examination of the blood for moderate leukocytosis and eosinophilia, for it must be remembered that in cases of parasitism, as well as in the ordinary appendicitis, a mild leukocytosis independent of the appendical condition is often observed; the blood picture is not very reliable, but it is useful, nevertheless. Of especial interest in this connection is the presence of eosinophilia, which with few exceptions is to be found in the infestation of the intestine with metazoan parasites.

Should the diagnosis of intestinal parasitism be made, the removal of these parasites and the appropriate treatment of the disorder should receive consideration before an operation for appendicitis is performed.

It might be objected that there is not sufficient time for such procedures when a few hours may mean life or death; but it should be remembered that I am not referring to the acute bacterial appendicitis, which is easily recognizable and distinguishable from the subacute and chronic types for which these precautions are especially recommended. It should also be noted that the carrying out of these examinations can be made in one, or at the most two, hours, in a well equipped hospital.

In elucidation of the parasitic disorder of the intestine which may simulate appendicitis, the finding of *Oxyuris vermicularis* in the appendix may be mentioned. In our general routine pathologic examination of this organ after appendectomy, experience shows that this parasite, as well as *Trichocephalus* and the eggs of *Schistosoma*, in this organ or its vicinity have often been encountered. An amebic disease of the cecum may clinically simulate appendicitis, but, as is

Fig. 7.—Same as figure 6 (high power) showing the egg of Schistosoma in the tissue.

well known, the ameba rarely invades the appendix. Clinical interpretation of this fact may be further illustrated by a brief summary of the following cases from the literature:

Gonzales,[1] citing several erroneous diagnoses due to a lack of the examination of the feces, says:

> In one of these cases an eminent surgeon performed a laparotomy for the purpose of removing the appendix, and, on finding the appendix perfectly healthy, decided to remove the right ovary, which was condemned by default as being responsible for the pain from which the patient suffered.
>
> In another case three internists and two surgeons diagnosed appendicitis, and an operation was fixed for the next day. In the evening, however, the diagnosis of intestinal parasitism, made by another physician, stopped the operation, and it is now seven years since that appendix has been awaiting the execution of that operative sentence.
>
> In two other cases surgical intervention was decided on, as in the others; but an opportune coprological examination commuted the sentence to the evacuation of the worms that simulated appendicitis.

Sir Leonard Rogers[2] mentions the close resemblance of amebic disease of the intestine to appendicitis, point-

1. Gonzales, R.: The Differential Diagnosis of Appendicitis and Bilharziosis.
2. Rogers, Leonard: Recent Advances in Tropical Medicine.

ing out that it may lead to a useless and dangerous operative procedure.

Cope,[3] as a result of his extensive experience in Mesopotamia, found that operative procedures in these cases are rarely required, and may even lead to conditions of shock induced by operation, removing the last chances of the patient's recovery.

Fig. 8.—Chronic type of inflammation and eggs of Schistosoma in schistosomiasis of the bladder.

Sir Leonard Rogers, in commenting on this, makes the following statement:

> Many surgeons, however, appear to be ignorant of this, if the writer can judge by the considerable proportion of chronic dysentery patients invalided home from India who are found by the Indian Office Medical Board to have their appendixes removed without lasting benefit. This is due to the frequency of slight thickening of the cecum in chronic or latent amebic disease, being mistaken for a thickening of the appendix. . . . Even death after such operations has been recorded by P. A. Petridis recently.

In my experience, it has been rather striking to note that, of all the cases of intestinal parasitism coming

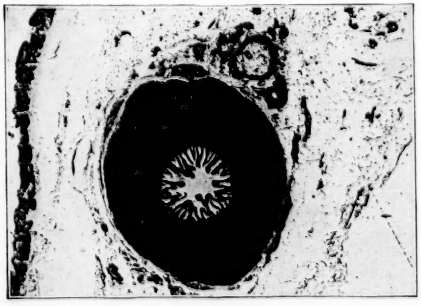

Fig. 9.—Schistosomiasis of the ureter near the appendix, showing egg of Schistosoma in the surrounding tissue.

under observation, the history reveals a previous operation of appendicitis in about 39 per cent, with no lasting improvement from the operation.

This brief discussion of the relation existing between intestinal parasitism and appendicitis clearly points to the advisability, except, perhaps, in acute appendicitis, of making a study, as complete as possible, of the true etiologic factors responsible for the pathologic condition of this organ and the presenting symptoms before an operative procedure is decided on. This is becoming of increasing importance if it is taken into consideration that statistical reports by several investigators in the United States show 10 per cent, and as high as 50 per cent, of parasitic infestation of the intestine in temperate and northern climates, brought about by the dissemination of parasitic diseases through the recent ingress of peoples from the tropical and oriental countries to these latitudes.

Fortunately, the diagnosis of these disorders is so simplified by a careful proctologic and coprologic examination and the search for easily recognized protozoan and metazoan parasites that there is no more reason for neglecting these important procedures in the study of a case than there is for neglecting the Wassermann reaction, the blood count, analysis of the urine, and other routine procedures.

3. Cope, V. Z.: Lancet **1**: 579 (March 13) 1920.

FELONS, ACUTE LYMPHANGITIS AND TENDON SHEATH INFECTIONS

DIFFERENTIAL DIAGNOSIS AND TREATMENT *

SUMNER L. KOCH, M.D.
CHICAGO

Although the essential points in the differential diagnosis of acute infections of the hand were clearly set forth by Kanavel [1] some years ago, the number of cases which have come to my attention in the past six months in which there was a failure to make an exact diagnosis, and the fact that a number of such cases have occurred in medical men leads me to believe that the subject deserves reemphasis in the clearest possible terms.

The characteristic symptoms of a felon are throbbing pain, swelling and tenderness which are limited to the distal phalanx. There may be a history of a penetrating wound from a sliver, a pin or a sharp pointed instrument, and there may be a tiny scar or evidence of recent injury. Not infrequently the etiologic factor has been unnoticed. The symptoms develop rapidly—within twenty-four or forty-eight hours; they are progressive and severe. Frequently the patient has spent hours walking the floor with pain before seeking relief. On examination one finds redness, swelling and almost boardlike induration, which is due in part to the firm consistency of the thick palmar skin. There is no fluctuation because of the great tension, and the slightest attempt to elicit it causes intense pain. The swelling does not extend above the distal phalanx nor are there red streaks running up the arm. Movement of the finger does not cause exaggeration of the pain. There is no lymphadenopathy at the elbow or axilla, and rarely is there fever of more than 1.5 degrees.

With such a clinical picture there can be no doubt as to the presence of pus in the anterior closed chamber of the distal phalanx. To wait for fluctuation or for the infection to "come to a head" is to cause the patient intense and unnecessary suffering. The finger should

* From the Department of Surgery, Northwestern University Medical School.

* Part of a paper read before the Muscatine County Medical Society, Muscatine, Iowa, Sept. 11, 1928.

1. Kanavel, A. B.: Infections of the Hand, Philadelphia, Lea & Febiger, 1911.

be opened at the earliest possible moment under a general anesthetic, such as nitrous oxide or ethylene. To freeze such an infected area causes further injury of the tissues, and to infiltrate it with procaine may diffuse the infection still more widely. Neither method, moreover, gives satisfactory anesthesia because the pus under tension has rendered the sensitive finger tip abnormally hyperesthetic. If nitrous oxide or ethylene is not available, the digital nerves at the base of the finger should be blocked with procaine.

To drain such an infection, an incision at one side of the finger suffices if it is long enough and if the knife is made to sweep across the palmar surface so as to divide the fibrous septums that pass vertically from the skin to the periosteum (fig. 1). The incision (fig. 2) should not extend upward far enough to permit invasion of the sheath of the deep flexor tendon at its insertion on the base of the distal phalanx. The

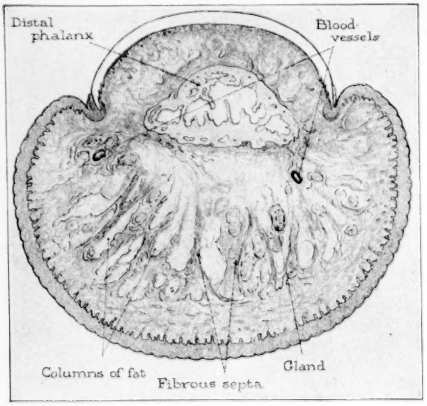

Fig. 1.—Cross-section of the distal phalanx of the finger. (After Kanavel).

horseshoe shaped incision so frequently advised is unduly long in healing, and leaves a painful scar over the finger tip and an anesthetic area distal to the scar which is particularly annoying to any one attempting to perform delicate manipulations.

If the condition is recognized early there should not be any necessity for curetting or excision of the bone. Because the digital arteries are compressed by the pressure of the exudate as they pass through the closed space, and because there is a direct path through the columns of fat for the transmission of infection from subcutaneous tissue to periosteum, bone involvement does take place early, but it should not occur if the symptoms are correctly interpreted and the condition properly treated early in the course of the infection.

After the incision is made, one should pack a little wedge of petrolatum gauze into the drainage wound in such a way as to hold the wound edges apart without preventing the escape of pus. Otherwise one may be disappointed to find the wound surfaces agglutinated at the end of twenty-four hours and drainage completely blocked. The finger is kept enveloped in a hot wet dressing until the infection is under control.

ACUTE LYMPHANGITIS

An acute lymphangitis usually results, just as does a felon, from an apparently trivial injury—a scratch, a pin prick, an injury from a sliver, a surgical needle or tonsil snare—or the abrasion of a superficial healing wound. Within a few hours local symptoms appear —discomfort, pain, redness and swelling. General symptoms—malaise, restlessness, rise of temperature—appear soon after; in the more severe cases there is a chill, high fever and prostration. Within the first twelve hours, sometimes even concomitant with the first symptoms, red streaks running up the forearm make their appearance and within twenty-four hours the lymph glands at the elbow or axilla or both become enlarged and painful.

Aside from the immediate site of the primary injury there are no definitely localized symptoms. The entire finger affected is reddened and swollen. Characteristically the swelling and lymphangitis are more pronounced on the dorsum of the finger and hand, for the lymphatics "take the shortest course to the back of the hand."[2] The distal phalanx is no more tender than any other part of the finger except just at the site of injury. Movement of the finger does not intensify the pain, and it can be passively extended and flexed without undue pain. With such a clinical picture there should not be any doubt as to the diagnosis of an acute lymphangitis.

The treatment indicated is rest in bed, the application of a hot wet dressing from the finger tips to the axilla, and abstinence from any form of active surgical treatment. To cut into such a finger in the first few days or even weeks, before definite localization of the infectious process has occurred, is to court almost certain disaster. It is scarcely necessary to cite specific instances. One tragic case was reported recently.[3] Within the past year I have seen three similar cases, all in members of the medical or dental profession. One recovered without serious mishap except a severe exaggeration of all the acute symptoms and a somewhat prolonged convalescence; in another the infection, which primarily was in the superficial tissues of the distal phalanx, was carried into the tendon sheath of the thumb, and went on to a severe suppurative infection of the radial and ulnar bursae; in the third the infection went on to a rapid and fatal termination.

In such cases if conservative measures—absolute rest in bed, forced administration of fluids, and the constant application of hot wet dressings to the entire upper extremity[4]—do not bring about an arrest of the infectious process, one may be certain that surgical intervention will only hasten the inevitable and fatal outcome.

TENDON SHEATH INFECTIONS

In unusual cases, tendon sheath infections are metastatic in origin; as a rule they result from direct inoculation through a penetrating wound; less often they develop secondarily to a more superficial infection. The characteristic symptoms are pain and swelling of the entire finger, with swelling more pronounced on the dorsum of the finger, and tenderness over the anatomic position of the tendon sheath. The patient holds his finger in a semiflexed position, and any

2. Kanavel, A. B.: Infections of the Hand, ed. 5, Philadelphia, Lea & Febiger, 1925, p. 295.
3. Koch, S. L.: J. Indiana M. A. **21**: 137 (April) 1928.
4. To keep a big moist dressing hot, a powerful light suspended close above the dressing serves satisfactorily. Such a device keeps the wet dressings at an even temperature and avoids the necessity of changing them at frequent intervals, a procedure that is disturbing and painful for the patient, and wasteful of surgical supplies.

attempt to extend it causes him to wince with pain. The only exception to this rule is in those cases in which the tendon sheath has been opened so widely by the original injury as to permit free drainage, and in which the diagnosis should be obvious. So characteristic are these symptoms—the tenderness which permits one to map out the extent of the tendon sheath, the position in which the finger is held, and the excruciating pain, invariably manifesting itself by a quick contortion of the face at any attempt of the examiner to straighten the finger—that there should never be any questions as to the diagnosis of a tendon sheath infection within twenty-four or forty-eight hours after its onset.

The only condition that can cause such exquisite pain on any attempt to straighten the finger is an acute suppurative arthritis of one of the interphalangeal joints—

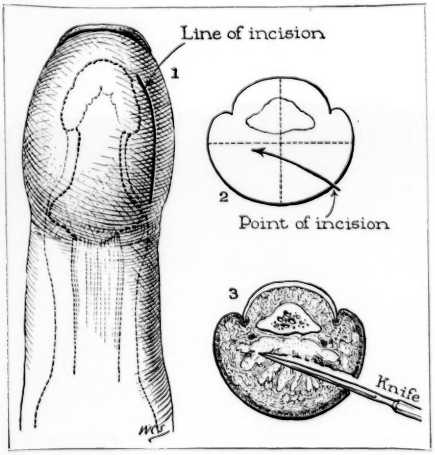

Fig. 2.—Proper incision for drainage of a felon.

a comparatively rare condition. In such a case the limitation of the signs of inflammation to the area about the joint, and the absence of tenderness over the tendon sheath, should make the diagnosis clear.

One must remember that, in neglected infections of the tendon sheaths of the thumb and little finger, the pressure of the exudate rupturing from the radial and ulnar bursae at the wrist compresses the median and ulnar nerves and gradually obtunds sensation and pain; but in such cases the early symptoms, the history of gradual decrease of pain concomitant with increasing numbness of the fingers, the increasing swelling and inflammation of the forearm and the general symptoms of an acute infectious process should not leave one in doubt as to the exact nature of the condition present.

The correct methods for draining an infection of the tendon sheaths, the importance of avoiding secondary and mixed infections if the tendon is to be saved, of not permitting the hand to become edematous and macerated by the prolonged use of hot wet dressings, of maintaining the hand in the "position of function" and of bringing about early mobilization have been stressed elsewhere.[5] The most careful operative and postoperative attention, however, cannot produce satisfactory results unless the correct diagnosis is made early in the course of the infection.

5. Koch, S. L.: Prevention of Contractures Following Infection of Hand, J. A. M. A. **88**: 1214 (April 16) 1927.

SUMMARY

The differential diagnosis of a felon, an acute lymphangitis and a tendon sheath infection depends on definite symptoms and signs which can be readily recognized if they are kept in mind and sought for. To make such a diagnosis is of the utmost importance, for the avoidance of bone destruction in the case of a felon and of tendon necrosis in the case of a tendon sheath infection depends on early incision and drainage. In the treatment of an acute lymphangitis, on the other hand, abstinence from surgical treatment is imperative if one is to avoid the possibility of converting a local infection into a general septicemia.

54 East Erie Street.

THE TREATMENT OF BURNS WITH NORMAL HORSE SERUM

REPORT OF CASES *

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In the management of burns, it has been stated that the best treatment is that which fulfils a threefold purpose: (1) It must favor separation of the slough; (2) it should maintain sterility of the resulting wound, and (3) it must promote granulation and the formation of new epidermis. To these requirements we would add a fourth, namely, that the treatment should prevent the absorption of toxins from the burned area in order to combat what is variously termed "constitutional reaction," "toxemia," or "secondary toxic wound-shock."

The importance of preventing toxemia has been pointed out by Gordon,[1] who says that "if a sound and simple means of preventing the toxemia which follows the burn could be found, a great step in the right direction would have been taken and a happier outlook could be entertained." Lee [2] has emphasized the fact that the problem of secondary toxic wound-shock has for many years been unsolved because of lack of knowledge of the cause. However, during the last few years experimental work conducted by several research workers has demonstrated that the constitutional reaction following the burn is due to absorption of toxins from the burned tissue, and this fact is now generally recognized. We shall endeavor to point out a simple method of controlling the toxemia.

The various methods of treatment advocated for burns are so numerous that we have been reluctant to report our own method. However, the treatment here described does not merely embody the use of another remedy; rather, it is a method based on sound physiologic principles, the application of which yields results not obtainable by other methods.

* Read before the Seventh Annual Convention of the National Association of Police and Fire Surgeons and Medical Directors of Civil Service Commissions of the United States, Atlantic City, N. J., Oct. 4, 1928.

1. Gordon, R. M.: Lancet **1**: 336 (Feb. 18) 1928.
2. Lee, W. E.: S. Clin. North America **8**: 901 (Aug.) 1928.

Our attention was directed to a report by Robinson [3] entitled "Artificial Cell Proliferation with Horse Serum in the Treatment of Burns," which appeared in 1917. He had achieved success in inducing growth of cellular tissue in cases of atrophy due to imperfect nutrition and, believing in the possibility of promoting through analogous processes the repair of tissues destroyed by burns, he made a practical application of the idea.

Robinson's patient, a woman, aged 45, was severely scalded with boiling water. The injured surfaces were the upper and middle third of the right leg, from 10 to 12 inches in length and from 4 to 8 inches wide; the calves of both legs; the left ankle; both buttocks; the left thigh, and the right cheek. The surface area of devitalized skin exceeded one third of the entire surface of the body. The burns were about equally of first and second degree in extent. On account of the extensive loss of skin, it was impossible to bring about satisfactory results through skin grafting. The burns were dressed with antiseptic ointment until the tenth day, when Robinson decided to use normal horse serum containing a small percentage of cresol. The serum was sprayed on the marginal skin cells and the parts were then covered with rubber tissue. The dressings were removed and the serum reapplied several times each day. Complete recovery ensued aften ten days of this serum treatment and the patient was discharged from the hospital twenty-one days after admission.

Fig. 1 (case 1).—The skin on the injured right hand shows a greater number of wrinkles than does the skin of the left hand when the fingers are extended. Otherwise the right hand appears normal like the left.

Our first opportunity to use normal horse serum in the treatment of burns came late in 1920.

REPORT OF CASES

CASE 1.—F. C., a young woman, received a second degree burn of the entire back of the right hand and proximal phalanges of the thumb and fingers from ether which had become ignited. The burn had been dressed with antiseptic ointment for a week by another physician. The patient came under our care on the eighth day. The burned area at that time was covered with a thick crust under which was an accumulation of pus and blood. We removed the crust and placed the hand for an hour in a bath of warm physiologic solution of sodium chloride. Several pieces of devitalized tissue were then removed with forceps and scissors, after which the entire burned area was thoroughly sprayed with normal horse serum from an ordinary oil atomizer. The wound was then covered with rubber tissue held in place by a light gauze bandage. During the next five days, the normal horse serum was applied twice daily and then once daily for four days, when the entire burned area was found to be completely covered with healthy epidermal tissue, and there was an entire absence of cicatricial tissue. This new tissue was a deep pink, and for several months it was quite sensitive to heat and cold as well as to pressure. However, the color bleached out in the course of a year and, today, it is quite difficult to detect which hand was injured. In figure 1, showing the hands with the fingers extended, the skin on the injured right hand shows a greater number of wrinkles than does the left. But in figure 2, showing the hands with the fingers tightly flexed, the character of the skin on the two hands is practically the same. This patient has the full, normal use of the right hand and there are no contractures.

The surprisingly satisfactory result in this case encouraged us to use the method at every opportunity in the future; and, during the past eight years, we have employed it in the treatment of several burns of relatively small area. The following brief case reports will serve as examples of the effectiveness of this method of treatment.

CASE 2.—C. N., a woman, had a boil on the extensor surface of the left forearm near the elbow. She had applied a wet dressing of a solution contained in a bottle labeled "laudanum." This bottle, however, had been in the house for several years and apparently had been refilled with some acid solution. There was a first degree burn of the entire surface covered by the dressing, comprising an area of 3½ by 4 inches on the extensor surface and about 2½ by 4 inches on the flexor surface of the forearm. Antiseptic ointment was applied as a temporary dressing, and the next day this was removed and the forearm placed in a bath of warm physiologic solution of sodium chloride. Then the burned areas were sprayed with normal horse serum and covered with rubber tissue and lightly bandaged. The dressings were changed once daily and on the fifth day the wounds had entirely healed and were covered with healthy skin.

CASE 3.—F. H., a truck driver, carried a pail of water to the front of the truck with the intention of filling the radiator in which the water was boiling. While he was in the act of loosening the radiator cap, the steam pressure forced the cap up and live steam enveloped the patient's face and right forearm, causing second degree burns. Antiseptic ointment was applied to the face, and the forearm was placed in a bath of warm salt solution and then sprayed with normal horse serum and covered with rubber tissue held in place by a bandage. Five hours later, the patient returned complaining of pain in the face but said that the forearm was comfortable except for an area about 1 inch square near the base of thumb where the dressing had worked loose. The patient was transferred to the Nyack Hospital, where the forearm was again treated with normal horse serum.

The ointment was removed from the face and the entire face was sprayed with normal horse serum. A face mask of rubber tissue was then applied and held in place by bandages. The dressings were changed and normal horse serum was reapplied every four hours. After two days, the face was completely healed and was left exposed to the air. The patient was discharged from the hospital on the sixth day and returned to work on the seventh day. The burned areas were covered with healthy epidermal tissue. There was no infection and no suggestion of any scar tissue. The patient stated that the normal horse serum dressings were very soothing and comfortable.

CASE 4.—H. G., a laboratory assistant, while removing with a pipet some pure phenol from a bottle, spilled some of the acid on the flexor surface of the right arm near the bend of the elbow. The acid was washed off with alcohol and antiseptic ointment applied. We saw the patient on the day fol-

3. Robinson, E. P.: Ann. Surg. **65**: 367 (March) 1917.

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lowing the injury. There was a second degree burn of the forearm approximately 3 by 5 inches in area. The ointment was removed and the forearm placed for one-half hour in a bath of warm saline solution. Devitalized tissue was removed with forceps and scissors from practically the entire burned area, which was then thoroughly sprayed with normal horse serum from an atomizer. The wound was covered with rubber tissue and lightly bandaged. This entire treatment was repeated twice daily for four days. On the fifth day, the wound was completely healed and covered with healthy, epidermal tissue of a deep pink color. There was entire absence of scar tissue.

Fig. 2 (case 1).—The character of the skin on the two hands appears practically the same when the fingers are tightly flexed. There is no evidence of scar tissue.

Recently there came under our care a patient whose injuries were so severe and in whom the result of our treatment proved so remarkable and so satisfactory that we deem it worth while to report the case in detail and to point out the advantages of our method of treatment with normal horse serum:

CASE 5.—J. W., a young chemist, on April 19, 1928, was closing an electric switch in the wall controlling a motor-operated mixing tank in which there was a quantity of purified petroleum benzin, when an electric spark from the motor ignited the vapors, causing an explosion. The room in which this occurred was on the ground floor level of a small two-story building. The flames cut off the exit, and were between the patient and a closed window. He jumped headlong through the fire and out through the window to the ground. First aid dressings of lime liniment were applied and he was immediately rushed to the Nyack Hospital.

On admission, the patient was suffering from shock. Examination showed second degree burns of the palmar and extensor surfaces of both hands, and the flexor and extensor surfaces of both forearms; first degree burns of the entire face and head; a lacerated wound of the right palm, probably caused by the broken window, and abrasions of both knees. Chronic cardiac valvular disease was also noted, a result of rheumatic fever in childhood.

The burns were dressed with an antiseptic ointment, and morphine was administered hypodermically to control the intense pain in the hands. A prophylactic dose of 1,500 units of tetanus antitoxin was administered subcutaneously in the interscapular region to guard against possible tetanus infection in the lacerated palm of the right hand, which came in contact with street dirt when the patient struck the ground after his jump through the window. On the second night, the pain was still quite severe and the administration of morphine was repeated. On the third day the heart required digitalis, which was administered every four hours during the next four days. The condition of the heart at this time was due, in our opinion, to the toxemia resulting from the absorption of toxins from the burned areas.

On the fourth day the patient complained of considerable discomfort in the hands, and the temperature mounted to 101.2 F. At this time the fingers and hands were nearly one and a half times the normal size. We regret that we neglected to take photographs at that time. Following a consultation, we decided to use the serum treatment.

The ointment was removed and the hands and forearms of the patient were immersed in a bath of warm physiologic solution of sodium chloride for a period of three hours, after which all devitalized tissue which had been loosened by the prolonged bath was removed with forceps and scissors. An ordinary oil atomizer was sterilized and filled with the normal horse serum. Then the forearms, hands and fingers were thoroughly sprayed with the serum and protected with rubber tissue held in place with gauze bandages. The dressings were removed and the normal horse serum was reapplied twice daily. The face at this time was healing nicely and it was left exposed to the air, being protected where necessary by a thin layer of the antiseptic ointment.

Twenty-four hours after the initial serum treatment, the patient's temperature dropped to 100 F. and he reported that his hands felt comfortable. On the second day of serum treatment, the temperature was down to 99.2 F., and on the third day of serum treatment the temperature was normal and remained normal during the remainder of the patient's stay in the hospital. On this day also the heart action had improved to such an extent that digitalis was discontinued. On the fifth day of the serum treatment the fingers on the left hand were healed sufficiently to warrant their being left unbandaged, and the patient was therefore able on this day to feed himself for the first time since his admission. From this date, the patient made a rapid and uneventful recovery, which was complete and

Fig. 3 (case 5).—Attention is called to the heavy transverse ridge in the thumb nails due to injury of the nail root by the burn. Hair has grown out from the new skin on the backs of the hands and the forearms.

without any complications. He was discharged from the hospital completely cured, May 4, having been in the hospital a total of fifteen days. Treatment with normal horse serum had been carried out during the latter eleven days of his stay.

By the term "completely cured" we mean that the entire burned areas were covered with new, healthy epidermal tissue and that there was an entire absence of cicatricial tissue. The new tissue over the wounded area was a deep pink and was

quite sensitive to heat and cold and to pressure. The color at the present time (five months after the injury) is fading out, as indicated in the accompanying photographs. In figure 3, the heavy transverse ridge in the thumb nails may be noted. This ridge indicates the severe injury to the root of the nail caused by the burn. Similar ridges were present on the nails of the fingers, but they have grown out beyond the tips of the fingers and have been removed. Hair has grown out from the new skin on the backs of the hands and fingers. Figure 4 shows the most striking result of the serum treatment of this case. The palmar surfaces of both hands are covered with strong, healthy tissue, and there is not even a suggestion of any scar tissue. The patient has complete normal use of both hands, for there is entire absence of any contracture. The lacerated wound at the base of the right thumb healed perfectly. The flexor surface of the right wrist at the ulnar side is the only portion of the new tissue that now shows any color; and at this location there is a triangular area of color which is still visible.

Fig. 4 (case 5).—The palmar surfaces of both hands are covered with strong healthy tissue, and there is no suggestion of any scar tissue. There is a triangular area of color still visible in the new tissue at the ulnar side of the flexor surface of the right wrist.

Throughout the serum treatment of our cases of burns, we have employed normal horse serum furnished by the Lederle Antitoxin Laboratories. This is a sterile serum containing 0.35 per cent cresol as a preservative. The bottle containing 100 cc. offers a convenient means of transferring the serum to an atomizer. It is said that normal horse serum increases the coagulability of the blood and, when applied locally, exercises a hemostatic action in controlling hemorrhage. It was the hemostatic action of the serum when applied to the oozing surface of a wound that suggested to Robinson's mind its possible beneficial action in the treatment of burns.

COMMENT

The rationale of using normal horse serum in the treatment of burns is dependent on the fact that the tissue cells require a physiologic medium in which to multiply and build up the destroyed area; otherwise scar tissue will result. Normal horse serum coagulates the exuding tissue plasma and holds it in contact with the living cells, which are thus provided with the necessary physiologic medium in which to multiply and rebuild the devitalized area by the formation of new, healthy epidermal tissue. The cresol, used as a preservative in the serum, acts as a mild antiseptic and tends to inhibit bacterial growth, thus minimizing the formation of pus and of scar tissue. It is important to prevent drying of the tissues of the burned area, as otherwise the cells will die; and the normal horse serum should therefore be applied at least twice daily. The use of rubber tissue[4] over the wounds prevents evaporation and thus insures prolonged action of the serum. For burns involving an extensive surface area, the warm saline bath may advantageously be given prior to each application of the serum, and in such cases the serum may be applied three or four times daily. Spraying affords a convenient method of applying the serum with a minimum of waste.

The treatment of burns which we have outlined serves a fourfold purpose: 1. The saline bath facilitates the removal of devitalized tissue. 2. The saline bath removes by dialysis the toxins generated in the burned areas, and thus prevents their absorption and the development of toxemia. In this connection, it should be emphasized that, when treatment with normal horse serum was started in the last case cited, the patient had a temperature of 101.2 F., which, in our opinion, resulted from the absorption of accumulated toxins. As soon as the toxins were removed by the saline bath and all devitalized tissue was taken off, the temperature immediately dropped and reached normal three days later. 3. The normal horse serum causes clotting of the exuding tissue plasma and thus provides the marginal and deeper tissue cells with a new protective film of coagulated tissue plasma free from accumulated toxins, so that the cells are fed with their natural physiologic food. This makes it possible for the entire denuded area to be uniformly and rapidly built up with new healthy tissue, instead of the scar tissue that so often forms as a result of other methods of treatment. 4. The cresol used as a preservative in the normal horse serum acts as a mild antiseptic and tends to inhibit bacterial growth, thus maintaining sterility of the wound and minimizing the formation of both pus and scar tissue.

SUMMARY

1. The method of treating burns with normal horse serum as here described is simple and easily applied. It does not soil bed linen or clothing.

2. In our hands, this method has yielded far better end-results than any other method that we have employed for the treatment of burns due to fire, hot water or acids.

3. The important advantages of this method of treating burns are (*a*) absence of scar tissue; (*b*) rapidity of formation of new epidermal tissue in all parts of the wound; (*c*) freedom from pain; (*d*) prevention of infection, and (*e*) elimination of toxemia by preventing the absorption of the toxins.

4. Even when the destruction of tissue involves a large area, the wound becomes covered with sound, healthy tissue and there is no contraction with result-

4. Surgical supply houses market this material under the name "rubber dam" in sheets of one square yard.

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ing deformity; splints, traction or skin grafts are not required.

5. When burns are treated by our method, bacterial growth is inhibited by the cresol in the serum and pus formation is minimized.

6. When burns of the skin bearing hair are treated with normal horse serum by our method, the denuded area becomes covered with healthy epidermal tissue which again bears hair.

7. We would emphasize the value of the preliminary bath of warm physiologic solution of sodium chloride. It not only facilitates removal of the devitalized tissue but also prevents absorption of the toxins generated in the burned area.

8. Normal horse serum containing cresol, when sprayed on the burned area, coagulates the exuding tissue plasma and thus provides the healthy cells with physiologic food, so that the cells can proliferate and form new, healthy epidermal tissue.

9. The serum should be applied at least twice daily to prevent drying of the tissues in the burned area, which would cause death of the cells.

10. After the normal horse serum has been applied, the wounded surface is protected with rubber tissue, which prevents evaporation and thus insures prolonged action of the serum.

50 North Broadway.

REPOSITORY INJECTIONS

HOW TO OBTAIN LASTING EFFECTS WITH INJECTED WATER-SOLUBLE MEDICAMENTS SUCH AS INSULIN AND EPINEPHRINE

CLAUSS BURKART STRAUCH, M.D.
MC GREGOR, MINN.

The parenteral introduction of various drugs has of late years become more and more common. Such injections, however, have the disadvantage that the drug effect is transitory, for, irrespective of the mode of injection, the medication reaches the blood stream relatively quickly and its effect is soon over. This drawback is, of course, not significant under some conditions,

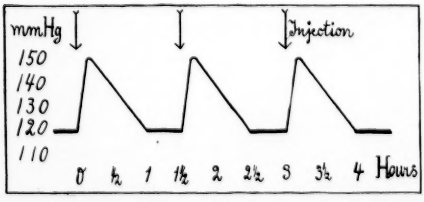

Fig. 1.—Blood pressure curve after three subcutaneous injections of 1 cc. each of epinephrine within four hours. The arrows indicate the injections. (Schematized in accordance with the normal curve of Dresel: Ztschr. f. exper. Path. u. Therap. **22**: 34, 1921.)

as the use of a narcotic to deaden pain, or of a stimulant during collapse. For many other purposes, however, as with glandular preparations, continuous action is much to be desired.

The transitory effect of hypodermic medication is well shown by two drugs, epinephrine and camphor. Figure 1 illustrates the effect on blood pressure of three injections of 1 cc. each of epinephrine given during a period of four hours. It will be noted that each injection was followed by a rise in the blood pressure, but that this rise was of short duration. Figure 2 illustrates the duration of action of an injection of 5 cc. of camphor in oil, the length of drug action being measured by the excretion of glycuronic acid in the urine. In this

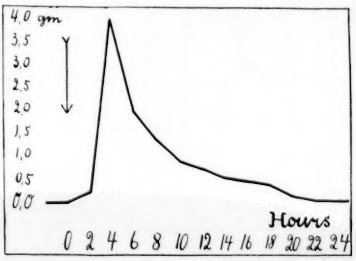

Fig. 2.—Effect of camphor after injection of 5 cc. of strong camphor liniment (measured by the elimination of glycuronic acid in the urine).

instance the relatively short period of drug action is again demonstrated. It is true that hypodermic medication can be supplemented by oral administration, and that with some drugs having a cumulative action, such as digitalis, prolonged effects can be obtained. Such instances are, however, rare.

The present paper describes a method whereby a prolonged and uniform effect can be obtained by the parenteral introduction of a therapeutic agent. No such method has been described heretofore; all previous hypodermic medication supposedly acting in the manner of a repository has consisted either of oil soluble substances (camphor) or of insoluble substances (mercury or bismuth). How brief the effect of a camphor repository is was shown in figure 2.

A simple method which permits the prolongation of the effect over days and weeks of water soluble drugs has been perfected in conjunction with Dr. H. Bernhardt, assistant at the First Medical Clinic of the University of Berlin, Charité Hospital (medical director, Professor His), where, for the most part, the clinical experiments were performed. Some of our investigations have already been reported.[1] As did Campbell [2] and others, we first attempted to obtain the desired results by various combinations of mucoid substances, agar-agar, gelatin and acacia. These experiments were unsuccessful. Fats and lipoids were also tried with similar results to those recorded by Hedvall.[3] Somewhat more successful results were obtained with hydrous wool fat.

The method finally selected was based on the following theoretical considerations: A water in oil emulsion (a combination seldom employed in pharmacology, which usually employs an oil in water emulsion) has the property of enclosing the water taken up by the fat (fig. 3). The subsequent absorption of the water is more or less hindered by the thin films of oil that sur-

1. Bernhardt, H., and Strauch, C. B.: Die Oel-Wasser und die Wasser-Oel Emulsionen in ihrer Beziehung zur Medizin, Ztschr. f. klin. Med. **104**: 723, 1926; Ueber parenterale Resorption von Fettstoffen, ibid. **106**: 671, 1927. Strauch, C. B., and Bernhardt, H.: Ueber parenterale Depots wasserloeslicher Medikamente, ibid. **104**: 744, 1926. Strauch, C. B.: Ueber die Bedingungen der Aufnahme und Abgabe von Wasser oder Medikamenten durch Salbengrundlagen, Beit. z. klin. Chir. **141**: 358, 1927.

2. Campbell, J. M. H.: Lancet **1**: 777 (Oct. 6) 1923.

3. Hedvall, Eric: Essays therapeutiques avec l'insuline en emulsion huileuse, Acta. med. Scandinav. **62**: 334, 1925.

round each drop of water. The delicacy of these films can be seen in figure 4 and better appreciated from the statement that 1 cc. of oil can easily contain from 3 to 10 cc. of water. It is possible to maintain such an emulsion by the addition of small amounts of certain specific substances, termed emulsifier or emulgator.

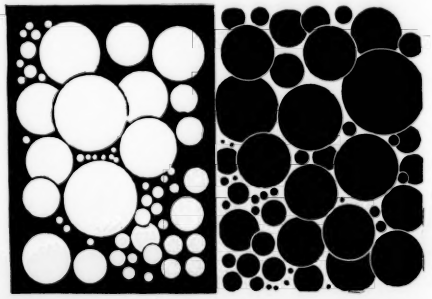

Fig. 3.—Schematized comparison of the two main forms of emulsions, showing the beginning of emulsification. At a higher degree of homogenization the picture becomes more uniform. Black shows the stained watery phase; white, the fatty phase.

These synthetically prepared emulsions, however, are always quickly destroyed when injected into the tissues. We have found still another group of substances, termed protective substances, which, when added to such water and oil mixtures with an emulgator, give a more or less stable emulsion which resists the action of the tissues.

A highly concentrated solution, for example, epinephrine 1:50, has added to it about 25 per cent of its volume in olive oil. Every single component has been sterilized separately. The following is a typical formula: concentrated and sterile solution of the drug,

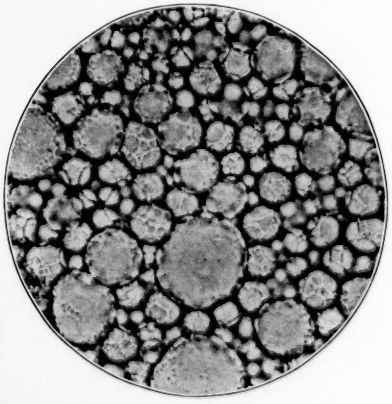

Fig. 4.—Appearance of an emulsion × 1,000 (oil immersion).

10 cc.; sterile olive oil, 2.5 cc.; sterile metacholestearin, 0.2 Gm.; sterile myricin, 0.3 Gm. The components are combined and transformed carefully into a sterile and stable water in oil emulsion. From 1 to 5 cc. of the total volume is injected intramuscularly. The result is a very gradual release of the epinephrine. Absorption of the drug occurs every time one oil film is released from its enclosed droplet of epinephrine. How quickly this release occurs is dependent on the amount of protective substance employed.

The fact that the emulgator found most effective, metacholestearin (Lifschuetz), and the best protective substance, a chemically pure wax, myricin (myricil palmitin acid ester), can be classed as more or less physiologic, permits the assumption that similar conditions also play a rôle in the membrane formation of body cells. Clowes [4] first pointed out the significance of the emulsion process in cell life.

These two substances (emulgator and protective substance) have such an elective effect on the surface energy of oil that we were able to demonstrate further that they regulate the separation of an oil-suspended pulverous medicament after injection into the body in minute additions like a specific brake or rein (stabilized suspensions). We were thus in the position of being able to produce repositories with pulverous as well as water-dissolved medicaments.

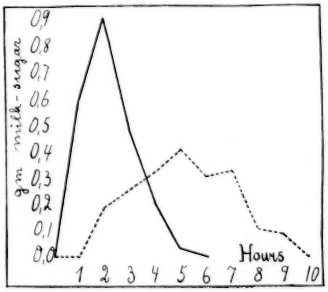

Fig. 5.—Lactose elimination curve after subcutaneous injection of 30 cc. of 9.2 per cent lactose solution: solid line, without the addition of 10 drops of epinephrine; broken line, with epinephrine. (According to Klapp: Deutsche Ztschr. f. Chir. **71**:197.)

That such combinations are effective is shown by the following experimental and clinical data: A number of mice were injected with 1 cc. of an emulsion prepared according to the method described. This emulsion contained 75 per cent of a 1:100 solution of methylene blue (methylthionine chloride U. S. P.). Blotting paper was kept on the bottom of the animals' cages in order to soak up the stained urine. After the injection the blotting paper, which was renewed daily, showed a fairly uniform methylene blue stain over a period of several weeks.

The lethal dose of strychnine nitrate for a mouse weighing 13 Gm. is 0.2 mg. If ten times the lethal dose (2.25 mg.) is given at one time in emulsion form the animal does not die, but even as late as four days after injection shows distinct tetanic spasms following light taps on the table, this being an evidence of continuing strychnine effect. With morphine repositories containing many times the lethal dose, and administered to mice, the typical elevation of the tail was maintained for about four days after the injection.[5]

4. Clowes, G. H. A.: Protoplasmic Equilibrium, J. phys. chem. **20**: 407, 1916.

5. These and other animal experiments were demonstrated by Dr. H. Bernhardt by means of a film at the Congress for Internal Medicine at Wiesbaden in April, 1928.

Quantitative results are shown in figures 5 and 6. As is shown in figure 5, a dog received an injection containing 30 cc. of a 9.2 per cent solution of lactose without, and at a later period with, the addition of 10 drops of epinephrine. The elimination of the lactose is shown to have continued for six hours without epinephrine and for ten hours when epinephrine was added. Figure 6 shows the results obtained when a dog was given an injection of a repository emulsion containing 45.3 Gm. of lactose. Elimination of the lactose was not complete even after fifteen days.

In a further experiment two completely diabetic dogs, made so by complete extirpation of the pancreas, were kept alive for eight weeks with repository injections of 200 units of insulin given every five days.

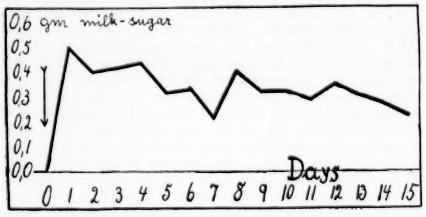

Fig. 6.—Lactose elimination curve after injection into a dog of 45.3 Gm. of lactose as a repository.

The foregoing as well as the following experiments were made with emulsions and with stabilized suspensions. Each has something in its favor. Since the preparations resembling ointments are rather viscid, they were put into tubes in sterilized form and easily transferred for injection into a modified syringe.

From the clinical standpoint repository injections were prepared and administered, atropine, strychnine, ergot, cardiac remedies, iodine, vaccines and irritants being used. For the present these experiments will not be discussed. Figure 7 shows the result of using an iodine repository, the lasting effect of which can be exactly determined.

One interesting series of observations concerns the use of insulin as a repository injection. More than 100 patients have been treated with insulin repository injections of from 100 to 1,000 units of insulin each. Of

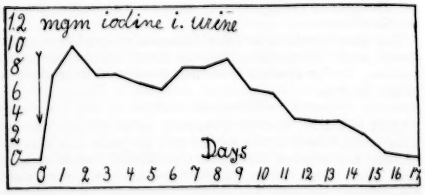

Fig. 7.—Effect of iodine repository.

this number nine patients were treated over a period of six months. In preparing the injection insulin powder was employed, 1 cc. of the suspension equaling 200 units of insulin. Injections were given every five to seven days. The hypoglycemia occasionally noticed on the first day and the evidences of cessation of drug action occasionally noticed on the sixth day were controlled by increasing or decreasing the carbohydrate intake (fig. 8). The acidosis was frequently more effectively influenced than was the blood sugar. Some patients reacted in much better fashion to the injection of repositories than to single injections. Variations in the physiologic strength of insulin powder and the instability of the repository preparations after two or three months is still an obstacle to its general use.

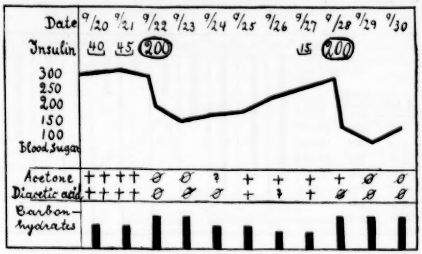

Fig. 8.—Effect of insulin repository (200 units is equal to 1 cc.). + means positive; ∅, negative.

Twenty-five patients with such conditions as pneumonia and cardiac collapse were given epinephrine repository injections, the repositories being arranged to have an action lasting from twenty-four to forty-eight hours (fig. 9). For such conditions as Addison's disease, the formula can be so arranged that much longer action is secured.

Pituitary extract fifteen times the usual strength was prepared for us, and repository injections of eight times the usual dose were prepared and administered in eight cases of diabetes insipidus. The patients were relieved of thirst for from three to six days and the urine excretion decreased (fig. 10).

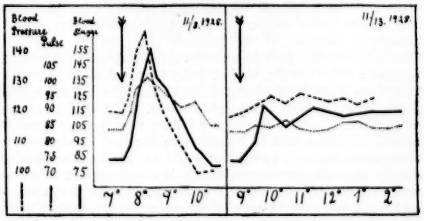

Fig. 9.—Comparative curves of effect of epinephrine: left, subcutaneous injection of 1 mg. of epinephrine in solution; right, 3 mg. of epinephrine as a repository, showing effect in the same patient in the fasting condition.

The question of the general effect of repository injections and their absorbability has been studied and previously reported on. At times after injection the patient complains of feeling a knot at the point of injection, but we have not observed an abscess, acute inflammatory reaction, pain or other sign of injury after any of the injections either in man or in animals. A dosage as high as 180 cc. given to a dog is absorbed within four months. The sterility of the fatty repository preparations can, of course, be readily accomplished and readily checked.

The objection that under certain conditions the repositories may separate very rapidly into compound parts, as when the patient has a fever or after improper pres-

ervation, has to be taken more seriously. In general, it can be said that the repository acts in the body similarly to a wound-up clock movement that requires a certain time to run down. For the same reason, the individual ability for absorption has a comparatively small influence on the duration of the effect. As a matter of fact, up to now we have never observed any danger through an overdose.

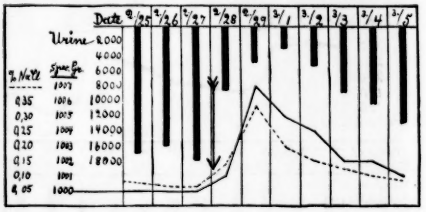

Fig. 10.—Effect of pituitary repository in a case of diabetes insipidus postencephalitis.

I believe that the method described opens a new era in injection therapy. The repository injections will supply to the body a substitute for the secretion of the endocrine glands of a similarly enduring and well regulated dosage and of far more varied effect.

Clinical Notes, Suggestions and New Instruments

GRADENIGO'S SYNDROME

GARNETT CHENEY, M.D., SAN FRANCISCO

Gradenigo's syndrome consists of a triad of symptoms which were first described by Gradenigo in 1904. They are acute suppurative otitis media, severe temporoparietal pain, and a paresis or paralysis of the abducens nerve on the same side. The syndrome has been frequently reported abroad, and recently several articles on the subject have appeared in this country, but these have been almost entirely confined to the special journals on otology and ophthalmology. The clinical picture is of general interest, as the pain is in the form of a trigeminal neuralgia, except that it is limited to the first division of the fifth nerve and may persist for weeks or months after the discharge from the ear has ceased. It is also important to recognize the ocular palsy, which usually occurs between the fourth and sixth weeks, as a part of the same picture, and to know that it nearly always clears up. Sears[1] has recently given an excellent survey of the syndrome.

REPORT OF CASE

Mrs. E. L. S., aged 60, an American housewife, first came under medical observation, March 22, 1928, because of severe pain in the left ear and jaw of two days' duration. The family history seemed irrelevant. She had not had any pregnancies. Her husband was living and in fair health. The only noteworthy event in her past history, aside from a decided hysterical trend, was the appearance of a fiery red lesion on her neck three months previously. This disappeared within two weeks but was followed by trouble with her teeth. She had had some teeth crowned by a dentist well known through his advertisements. She continued to have occasional aching, particularly in the left upper jaw, previous to her present complaint. For two days she had suffered such pains in her left ear that she was beside herself. As she was a Christian scientist she had not permitted her husband to call a physician.

1. Sears, W. H.: Laryngoscope **37**: 33 (Jan.) 1927.

The patient was well developed and well nourished, but her manner was uncooperative and hysterical. The pulse rate was 68, and the temperature was 99.2 F. The appearance of the eyes and pupils was not unusual. The external meatus of the left ear was red, puffy and very tender, but no discharge was noted. The teeth were in poor condition, several exuding pus from the sockets. The breath was foul and the tongue thickly coated. The tonsils and throat did not show any evidence of infection. The skin over the lower left side of the face and neck was red and rough. There were no enlarged cervical glands. Examination of the chest, heart, lungs, breasts, abdomen, spine, reflexes and joints did not disclose anything remarkable. The blood pressure was 118 systolic and 78 diastolic. The urine and the Kahn test for syphilis were negative. An ear consultant was called in who opened the left ear drum, permitting the free discharge of a small amount of thin pus, and the patient felt considerably relieved.

The next day she had an erysipelas of the left side of the face, ear and tongue, which reached its height two days later and gradually subsided. The temperature was not more than 100 F. During this time she complained of severe pain in the left ear and the left temple, although the ear was draining well and there was no pronounced mastoid tenderness. A week after she was first seen the pain in the left ear became excruciating and it was also felt in the left temporal and parietal regions. Skin hyperesthesia was marked over these areas. Large doses of amidopyrine and codeine were necessary to control the pain. A complete blood count at this time was normal, and the temperature was 99.2 F. During the next four weeks she suffered from similar pains over the same region. She described a constant dull ache emanating from within the ear itself, a throbbing pain and unbearable attacks of terrific, shooting knifelike pain running above her left ear. Her suffering was allayed only by the constant use of drugs.

On the thirty-sixth day of her illness, the patient developed a weakness of the external rectus muscle of the left eye which persisted for two weeks. The pain persisted and she felt that she was "at the end of her rope." She threatened suicide on three occasions. The ear had ceased to drain. She had had several abscessed teeth removed, but the neuralgia persisted a month longer, the attacks gradually growing less severe and less frequent. The total course of her illness was three months, but even after this time she used codeine occasionally for persistent neuralgia. Six months later she was reported free of pain.

Shreve Building.

TULAREMIA FROM THE MUSKRAT

HAROLD SCHWARTZ, M.D., BUTTE, MONT.

The occurrence of tularemia in man is rapidly assuming more importance in the field of medicine. The increasing and widespread incidence of tularemia in the animal kingdom and the discovery of new sources of infection adds further interest to this disease.

The cases of ulceroglandular tularemia reported here reveal a new source of infection: both are directly attributable to the muskrat, having resulted from the skinning of a muskrat to obtain the pelt.

REPORT OF CASES

CASE 1.—A. K., aged 29, a Japanese section laborer who had lived in the United States for the past ten years and who had not had any previous illness, on Oct. 28, 1928, while camping near Deer Lodge, Mont., caught a muskrat in a pond along the railroad and with his companion skinned the muskrat to obtain the pelt. November 1, forty-eight hours later, he noticed a red streak on his left arm, extending from the epitrochlear gland to the axilla. The axillary glands were swollen and tender. A few hours later he noticed a blister-like sore on the inner surface of the middle finger of the left hand. He felt feverish for two days and had some malaise. He was confined to bed for one day. He did not have any chills or headache. The swelling of the epitrochlear gland and of the axillary glands increased in size for four or five days and then remained stationary. The lesion on the finger was entirely healed on November 20. There was no history of previous injury to the

hand. There was no secondary rise in temperature, and no skin eruption was noticed. The patient resumed his work after three days.

At examination, November 28, the patient's general appearance was good. The temperature was 99 F.; the pulse rate, 76. The condition of the heart and lungs was excellent. The blood pressure was normal. The patient had a healed scarred lesion on the inner surface of the middle finger of the left hand, about three-fourths by one-half inch (19 by 13 mm.). The epitrochlear gland was enlarged, 1 by one-third inch (25 by 8 mm.). The axillary glands were enlarged in a mass about the size of a small orange, and were tender to the touch. There was no evidence of suppuration or of other glandular enlargement. Subcutaneous nodules were not present on the arm or forearm. From the history and examination a diagnosis of the ulceroglandular type of tularemia was made. This was confirmed, November 30, by a report from the state hygienic laboratory showing complete agglutination of *Bacterium tularense* in dilution 1:640.

CASE 2.—T. A., aged 30, a Japanese section laborer, whose history was practically the same as that of patient 1 as to the time of onset and the beginning symptoms, had, however, an unhealed abrasion on his finger at the time he assisted in skinning the muskrat. The patient observed that his symptoms began four hours earlier than those in patient 1. Soreness and swelling in the left axilla were first noticed, followed in twenty-four hours by soreness over the middle joint of the left index finger. A red streak from the epitrochlear region to the axilla appeared at the same time. The patient had chills the first day, fever for two days and felt ill enough to be confined to bed for two days. He had headache for a period of two weeks. The glands in the axilla increased in size until the fifth day, after which they remained stationary. The finger healed in fifteen days, after ulcerating and liberating a small necrotic core. The patient resumed work on the third day.

At examination, Nov. 28, 1928, the patient's general appearance was good. The temperature was 98.6 F.; the pulse, 74. The heart and lungs were normal. There was a healed scarred lesion about one-half inch (13 mm.) in diameter over the middle joint of the index finger on the left hand. The left epitrochlear gland was enlarged to about one-half by one-fourth inch (13 by 6 mm.). The axillary glands were enlarged in a mass the size of an egg, and tenderness was noticed. There was no evidence of suppuration.

The diagnosis of tularemia (ulceroglandular type) was confirmed by a report on the blood from the state hygienic laboratory, November 30, to the effect that there was agglutination with *B. tularense* in 1:320 dilution, and partial agglutination in 1:640 dilution.

COMMENT

In a review of the literature, I failed to find any reference to the muskrat as a source of human infection with tularemia. Inquiries were addressed to the Montana State Hygienic Laboratory and to the United States Hygienic Laboratory.

Dr. McCoy of the Hygienic Laboratory replied: "The cases of tularemia you mention are, so far as I know, the first definitely attributable to muskrat infection, although we have known for some time that the muskrat was susceptible."

Dr. Cogswell of the state hygienic laboratory of Montana replied: "This is the first report of this disease in Montana having been contracted from muskrats—probably the first in the country." Later, he forwarded a communication from E. M. Wade, chief of laboratories in Minnesota, relative to experimental work on the muskrat, which is of interest in this connection: "Our experience with muskrats in tularemia has been confined to experimental work. We have inoculated subcutaneously and through skin abrasion several muskrats, all of which succumbed to the disease in two to five days. All of these animals had on autopsy typical lesions of tularemia in the spleen and liver, as well as inguinal glands. Material from these organs as well as the heart's blood of the muskrats inoculated into guinea-pigs produced typical lesions and death of the guinea-pigs."

How the muskrat in nature becomes infected with tularemia is a future problem for the scientific investigator.

58 West Quartz Street.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, Secretary.

LENIGALLOL. — Pyrogallolis Triacetas. — Triacetylpyrogallol. $C_6H_3(CH_3CO_2)_3$.—Pyrogallol triacetate, obtained by replacing the hydroxyl groups of pyrogallol with acetate groups.

Actions and Uses.—Lenigallol as such is said to be nonpoisonous and nonirritating, but it produces a mild and painless corrosive effect by the gradual liberation of pyrogallol. (See note under Creosote and Guaiacol Compounds.)

It is introduced as a substitute for pyrogallol in psoriasis, lupus, acute and subacute eczema of children and other skin diseases.

Dosage.—In 5 to 10 per cent ointment with zinc oxide.

Manufactured by Knoll A.-G., Ludwigshafen a.Rh., Germany (E. Bilhuber, Inc., New York, distributor). No U. S. patent or trademark.

Lenigallol is prepared by boiling 10 parts of pyrogallol, 1 part sodium acetate and 25 parts of acetic anhydride for two hours, and washing the crystalline product on a filter with water.

It is a white, crystalline powder, melting at 165 C. It is insoluble in water, but soluble with decomposition in warm aqueous alkalies.

Lenigallol is incompatible with alkalis, strong acids and oxidizing agents.

BISMUTH SODIUM TARTRATE-SEARLE (See THE JOURNAL, June 30, 1928, p. 2103). The following dosage form has been accepted:

Solution Bismuth Sodium Tartrate-Searle, 1.5 per cent: An aqueous solution containing bismuth sodium tartrate-Searle 0.015 Gm., benzyl alcohol 0.02 Gm., and sucrose 0.25 Gm., in one cubic centimeter.

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED THE PUBLICATION OF THE FOLLOWING REPORT.

W. A. PUCKNER, Secretary.

NATIONAL RADIUM EMANATOR AND SAUBERMANN RADIUM EMANATION ACTIVATOR OMITTED FROM N. N. R.

The National Radium Emanator, marketed by the National Radium Products Company, and the Saubermann Radium Emanation Activator, marketed by Radium Limited, are appliances for impregnating drinking water with radon (radium emanation) in dosages ranging from 50,000 to 200,000 mache units in the case of the former, and 10,000 to 100,000 mache units in the case of the latter. The acceptance of both these products expiring this year, the firms were asked to submit evidence in favor of their continued inclusion in New and Nonofficial Remedies. The National Radium Products Company submitted an advertising circular which was in effect an indirect advertisement to the public and which made claims far in excess of those previously permitted by the Council for radium and radium preparations. Radium Limited failed to respond to requests for the current advertising.

For some time the Council has been dubious of the therapeutic value of radioactive drinking water. In 1927 the Council decided to continue the acceptance of preparations designed for the internal use of radium only on condition that the claims for them were limited to recommendations for trial in chronic arthritis, gout, neuritis and high blood pressure. In consideration of the claims made for the National Radium Emanator and of the failure of the manufacturers of the Saubermann Radium Emanation Activator to submit the present advertising claims to the Council for review, and because no further acceptable evidence has become available, the Council voted to omit these products from New and Nonofficial Remedies and not to accept further apparatus for the activation of drinking water until convincing evidence for the therapeutic value of the internal use of radon becomes available.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, APRIL 6, 1929

STARVATION AS A THERAPY

Fasting as a cure of diseases other than those due to overeating runs back to antiquity. It is frequently bound up with religious practices and prayer under the assumption that abstinence from food "purifies" the body and renders it less susceptible to the influences of evil and more susceptible to the influences of good. When fasting is united with prayer one cannot know whether the favorable outcome is due to the fasting or to the prayer. In a recent address before the Medical Society of London, Dr. Edmund Spriggs [1] reviews the history of fasting as a therapy in earlier times, the modern indications for fasting in disease, and the dangers involved in the therapy of fasting. The physical, chemical and mental changes involved in prolonged starvation have been subjected to excellent studies both on man and on animals in recent years. Organs lose weight, not uniformly, and some, such as the heart and brain, lose at a much slower rate than organs such as the pancreas, liver and spleen, and the skeletal muscles. The basal metabolic rate and the blood pressure are gradually lowered during a prolonged fast. Complete starvation, particularly in an obese person, leads to a mild degree of acidosis. The changes in the blood during starvation are not great. There is a tendency to a slight increase of the nonprotein nitrogen and slight but not consistent or persistent decrease in the blood sugar. A healthy, well nourished man may fast for from thirty to forty days without demonstrable permanent injury, and dogs may fast without apparent injury for a much longer time. All this, of course, is under conditions when the individual receives a liberal allowance of water. After the rapid loss of weight during the first few days of fasting, an adult person on complete starvation may lose weight at the rate of about half a pound a day when no excessive physical work is being done. Despite the complete absence of food in the alimentary canal for from thirty to forty or more days, the alimentary canal still harbors at the end the flora common for this organ. Fasting for the purpose of sterilization of the alimentary canal is a failure. Complete starvation is not painful. The essential subjective symptoms are fatigue, and the predominance in consciousness of thought of food and eating. The sex urge is decreased. Dr. Spriggs refers to the wartime undernutrition experience of central Europe. Good clinical studies of these conditions have been reported. At no time, of course, was there complete starvation in Germany or Austria. There was rather prolonged undernutrition and probably, in some cases, there were qualitative deficiencies in the diet, accompanied by unusual mental stress and anxiety, worry and fear. Under this restricted food intake in central Europe cases of diabetes, gout and obesity were greatly improved or decreased in number, while nervous disorders increased, as did tuberculosis and anemia. Patients with myxedema appeared to do badly. Chronic diarrheas and digestive disorders were increased, but this may have been due to the abnormal character of the available food rather than to the partial starvation.

Dr. Spriggs outlines the results of the clinical experience with starvation in local diseases of the alimentary canal, in epilepsy, in obesity, in diabetes, and in diseases of the circulation. He concludes that complete fasting is beneficial in appendicitis, peritonitis and ulcers, largely on the basis of the rest of the digestive organs afforded by the absence of food. The reasons assigned for the apparent benefits of fasting in alimentary canal disorders do not seem convincing, since it is now known that the digestive glands continue to secrete and the alimentary canal continues to exhibit motility all through a prolonged fast. Short complete fasts of from two to three days are said to be valuable in a number of other diseases, such as pneumonia, severe fevers, acute nephritis, chronic uremia, migraine, hyperthyroidism, local infections, phlebitis, rheumatism, rickets, and the vomiting of pregnancy. A number of physicians have reported diminution in the number and intensity of epileptic attacks in patients with idiopathic epilepsy during fasting. This appears to be due, not to the fasting directly, but to the acidosis accompanying the fast. On the resumption of a normal diet the condition of the patient returns to the original state. Dr. Spriggs discusses in greater detail the regimen of fasting in obesity. He recommends not complete abstinence from food but a severe restriction of the calory intake to a level of from 1,000 to 1,300 calories. This restriction should be horizontal rather than vertical, so that the patient obtains some of every ingredient necessary for the body welfare. The calory restriction is usually coupled with a definite increase in physical activity. Dr. Spriggs appears to have had success with this therapy not only with those obese from excessive eating but even in those obese in consequence of apparently hereditary factors ("endogenous" obesity). The pains and discomforts that some of these patients may exhibit after ten days or two weeks

1. Spriggs, Edmund: Lancet **1**: 485 (March 9) 1929.

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on this low calory intake are said to be quickly relieved by a meal. "Serious symptoms seldom arise during the treatment, and those formerly present generally disappear. Especially striking is the loss of breathlessness." This is ascribed to the removal of fatty tissue among and within the muscle fibers of the heart. Anemia, it is reported, does not develop under this regimen. Dr. Spriggs remarks that obesity is often complicated by other disorders, and as a general rule after treatment by starvation the accompanying disease is improved. Two conditions especially can nearly always be treated in this way: circulatory disorders and mild glycosuria. Patients with high blood pressure benefit almost invariably by reduction in weight, if they are overweight, and in the majority of other patients the blood pressure is also reduced. Dr. Spriggs considers that a temporary short fast is still of value in diabetes, and mild diabetes may be controlled by moderate calory restriction without the use of insulin. He points out that children and cachectic and tuberculous individuals should not be deprived of food for more than a comparatively short period.

Except in cases of obesity clearly due to overeating or underexercise, the fasting therapy is obviously not a cure-all but merely an aid to other remedial measures. The complications that may arise in a prolonged fast and the dangers to life and health that may eventuate in a starving person who is sick to begin with are such that fasting as a therapy is not safe except in the hands of competent physicians.

According to Dr. Spriggs, fasting in an otherwise healthy person decreases resistance to infectious diseases. This may be seriously questioned, at least in cases of complete fasting not extending over longer periods than from fifteen to thirty days. As to the ways in which fasting may improve the general body health, there is little reliable information except for those obviously obese from overeating, in which case it may be a matter of less work for the heart, lessened tendency to fatty infiltration of essential tissues, and lessened strain on the pancreas and the liver. Dr. Kunde [2] has shown that in complete fasts of fifteen days or more in man and from thirty to fifty days in dogs there is an increase in the basal metabolic rate extending over many months after the fast has been broken. In dogs there is also an increased secretion of gastric juice and greater economy in the utilization of nutrients by the tissues. If these results should be confirmed and extended, some of the apparent benefits from fasting may be rendered understandable on these lines. Further, since in fasting the glandular tissues, among them the liver, pancreas, gastro-intestinal mucosa, thyroids and gonads, suffer great loss of weight, it is not improbable that in realimentation these organs respond with increased cell division and therefore may be said to be partly rejuvenated. This matter requires further investigation before it can be put forth as a basis for fasting therapy.

It has been suggested that nature itself points toward a fasting therapy in those diseases that are accompanied by decreased hunger and appetite. But the success of the newer regimen of "feeding fevers" questions the inference. The ills of overeating and the dangers of partial starvation are relative, and excessive claims are advanced in both directions.

Among some people in this country, fasting as a road to health has become an unscientific if not an injurious fad. On the other hand, some physicians go to the other extreme in holding that short periods of complete abstinence from food, and longer periods of severe restriction in calory intake, are always dangerous proceedings. Some of Dr. Sprigg's conclusions are still tentative. More controlled observations both in the clinic and in the laboratory are needed before the final word can be said on the value and the limitations of fasting. But if there is real albeit limited merit in the fasting therapy, its aroma of cultism and occultism is no deterrant.

2. Kunde, M. M.: J. Metab. Research **3**: 399 (March) 1923; Am. J. Physiol. **68**: 389 (April) 1924.

VITAMIN CONTENT OF TREATED TOMATOES AND ASPARAGUS

In 1927 THE JOURNAL called attention editorially to the ethylene treatment of fruits and certain vegetables [1] and pointed out the necessity of research to determine the possible effect of ethylene on the vitamin content of such products as tomatoes. Since then the ethylene treatment of fruits and vegetables has received considerable publicity and its use is increasing. There appear to be two types of ethylene treatment,[2] one in which the ethylene seems to be used primarily for artificial coloration of oranges and lemons as a means of evading the proscriptions of the Food and Drugs Act against the artificial coloration of citrus fruits by dyes, even though harmless. The position of the government in this respect is perhaps inconsistent, in view of the fact that the work was done by government experts in collaboration with citrus fruit growers' organizations. The other type of ethylene treatment is that advocated by Harvey and his co-workers at the University of Minnesota, who have maintained that certain fruits (other than the citrus) and vegetables such as celery and tomatoes, when subjected to a sufficient concentration of ethylene, can be ripened as well as colored.[3]

During the summer of 1928 an announcement was made by M. F. Babb that celery bleached by ethylene was not different in vitamin B content [4] from ordinary

1. Artificial Ripening of Fruits by Ethylene, editorial, J. A. M. A. **89**: 792 (Sept. 3) 1927.
2. Artificial Coloration of Citrus Fruits, editorial, J. A. M. A. **89**: 1875 (Nov. 26) 1927.
3. Recent reviews are given by Harvey, R. B.: Artificial Ripening of Fruits and Vegetables, Bull. 247, Univ. Minnesota Agric. Exper. Sta., October, 1928.
4. Vitamin B Content of Artificially (Ethylene) Ripened Celery, J. A. M. A. **91**: 965 (Sept. 29) 1928. Babb, M. F.: Effect of Ethylene upon the Vitamin B Content of Celery, Science, Sept. 7, 1928, p. 231.

blanched celery, though the complete data on which this statement was based were not published.

Now comes the publication of House, Nelson and Haber,[5] which answers questions first propounded by THE JOURNAL in reference to the vitamin content as it affects tomatoes. These investigators, from the Iowa Agricultural Experiment Station, have made a comparison of the vitamin A, B and C content of green, air ripened, ethylene ripened and vine ripened tomatoes. They conclude that no difference was apparent in the vitamin B content of these various types of tomatoes. The vitamin A content of ripened tomatoes was found to be greater than that of the green mature fruit, and the same quantity of vitamin A was developed in the tomatoes regardless of the method of ripening employed. Of particular interest to physicians is the vitamin C content for which tomatoes are generally prescribed in a diet. The Iowa workers found green tomatoes to be relatively poor in vitamin C content; air ripened and ethylene ripened tomatoes were richer in this vitamin than the green fruit. On the other hand, the vine ripened tomatoes were superior in vitamin C content to artificial ripened fruit or to green tomatoes. This bears out the recommendation of THE JOURNAL when it first commented on the ethylene treatment of fruits; namely, that until investigation showed otherwise, the use of vitamin-containing products in as near a "naturally ripened" condition as possible should be encouraged when used for prophylaxis against avitaminosis.

In the same issue of the *Journal of Biological Chemistry* as the report on the investigation of treated tomatoes appears a report from research workers at Michigan State College on the association of vitamin A with greenness in plant tissue.[6] In the case of green asparagus, whether freshly cooked or canned, there was demonstrated the presence of vitamin A in sufficient quantities to promote health and growth when fed daily to albino rats. Bleached asparagus, on the contrary, gave no stimulant to health and growth when fed to experimental animals. They died as rapidly on the vitamin A free diet containing culinary "white" asparagus[7] as the negative controls. Crist and Dye are of the opinion that a positive relationship exists between chlorophyll development and vitamin A content. Whether or not this association is unalterably one of cause and effect is a question still to be answered. The answer probably hinges on the experimental task of procuring plant tissue which is not green but the chemical composition of which will not introduce factors that complicate the results.

5. House, Margaret C.; Nelson, P. Mabel; and Haber, E. S.: The Vitamin A, B and C Content of Artificially Versus Naturally Ripened Tomatoes, J. Biol. Chem. **81**: 495 (March) 1929.

6. Crist, J. W., and Dye, Marie: I. The Association of Vitamin A with Greenness in Plant Tissue: II. The Vitamin A Content of Asparagus, J. Biol. Chem. **81**: 525 (March) 1929.

7. By bleaching the authors mean that the tissue has not been allowed to become green. This condition is obtained by covering the stalks with soil and cutting them just before they emerge above the ground.

Current Comment

DEDUCTIBILITY OF TRAVELING EXPENSES CONFIRMED

The Commissioner of Internal Revenue has acquiesced[1] in the decisions of the Board of Tax Appeals[2] in which the board held that a physician in computing his federal income taxes may deduct as a professional expense the reasonable cost of travel, including railroad fares, Pullman accommodations, room and board, incident to attendance at meetings of medical organizations of which he is a member. The commissioner's acquiescence marks the end of the controversy by a decision in favor of the medical profession. To those physicians who in 1926 and thereafter paid increased federal income taxes because of the decision of the Commissioner of Internal Revenue in 1922 denying the deductibility of traveling expenses, the way is now open to obtain refunds of the excess paid. Presumably, however, the amount claimable as a refund will ordinarily be too small in individual cases to warrant the trouble incident to obtaining repayment. If the amount involved is sufficiently large to justify a physician in applying for a refund, he should obtain from the collector of internal revenue to whom the excess taxes were paid a copy of form number 843, execute it before a notary public or other officer authorized to administer oaths, and file it with the collector to whom payments were made. No application should be made, however, unless the physician is prepared to verify his claim by adequate evidence, in addition to his own affidavit, if called on to do so. It is presumed that the Commissioner of Internal Revenue will exercise a reasonable discretion, with respect to such demands, but nothing will be gained by submitting claims that cannot be reasonably well verified.

S. E. BALL AND OFFICIAL INCOMPETENCE

Samuel E. Ball, quack and ex-"patent medicine" manufacturer, who operates noisily from Excelsior Springs, Missouri, has just scored a triumph that is inimical to the public welfare. Ball conducts what he is pleased to call the "Ball Health School." Ball's quackery has long been a stench in Missouri, and finally, in November, 1926, the state board of health revoked Ball's license following a hearing in which Ball was charged with unprofessional conduct in soliciting patients at railroad stations, with paying taxicab drivers for sending patients to his quackatorium, and with paying others in nearby cities commissions for patients that were sent to him. The Missouri state law specifically defines the soliciting of patronage by agents as constituting unprofessional and dishonorable conduct and the law also authorizes the state board to revoke physicians' licenses for such conduct. Following the revocation of his license, Ball appealed to the circuit court for a review of the findings and that court restored Ball's license. Following this, the state board

1. Internal Revenue Bulletin **8**: 12-1 (March 25) 1929.

2. Cecil M. Jack v. Commissioner, 13 B. T. A. 726; J. Bentley Squier v. Commissioner, 13 B. T. A. 1223.

of health appealed to the supreme court. Now, the Missouri supreme court has perforce affirmed the order of the circuit court to restore the license. The supreme court's decision, it seems, is based on the failure of the board of health to enter in its records the specific ground on which it revoked Ball's license. Judge Blair, who wrote the opinion, is said to state that the evidence shows without contradiction that solicitors or runners *were* employed to meet trains and interurban cars in Excelsior Springs to solicit persons to go to Ball's institution, which was conducted by a company in which Ball and his wife owned 93 per cent of the stock. The supreme court further stated that, in its opinion, while it was satisfied that the evidence would have justified a finding by the state board that Ball was guilty of unprofessional and dishonorable conduct, nevertheless the court was "unable to see from the record made by the board itself that it ever made any such findings"! In view of the facts cited, one wonders whether the state board's action against Ball was a theatrical gesture.

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ORAL ADMINISTRATION OF TYPHOID VACCINE

Almost twenty-five years has passed since Almroth Wright made the first experiment in immunizing human subjects against typhoid by the oral route. He used a heat killed vaccine and estimated the success of his experiment by changes induced in the bactericidal power of the blood. In the seven subjects treated, bactericidal power was increased in three and diminished in four. These negative results seem to have discouraged further experiment for some years. French investigators, however, began to experiment with oral immunization in animals shortly before the war, notably Besredka, who was able to achieve successful results with paratyphoid vaccine in rabbits by preparing the rabbit's intestine with a 10 cc. dose of bile. Besredka's experiments were interrupted by the war but were resumed as soon as he returned to civil life. The first clinical experiment in man was undertaken during an epidemic at a military school at La Fleche (Sarthe) in April, 1922.[1] Of 521 students exposed to infection, 268 received vaccine by mouth and 253 by the subcutaneous route. Five new cases developed in the former group and ten in the latter. Since this experience the oral method has been used in larger communities and with apparently successful results. Recently two investigators[2] in the department of bacteriology of the University of Washington have observed the effect of oral administration on antibody formation. Incidentally they confirm previous clinical reports that the oral administration does not lead to the rather severe systemic response which sometimes follows subcutaneous inoculation. Using the triple vaccine they found that 88.5 per cent of their subjects developed agglutinins for typhoid and a lesser number for paratyphoid bacilli. This is compared to 80 per cent who, according to the literature, develop agglutinins after subcutaneous inoculation and to 90 to 95 per cent who show a positive Widal reaction after suffering from the disease. The administration of bile before the vaccine increased the percentage and shortened somewhat the latent period in which agglutinins are developed. This interval, the investigators find, is no longer when the oral method is used than it is for the more orthodox method. Complement fixations and precipitins were tested in a smaller number of persons and were found to be present more frequently than in the case of subcutaneous inoculation. Rather curiously, the administration of bile did not appear to affect the complement fixations, but the numbers are not large enough to make this observation significant. These results show a closer similarity in antibody formation to the immunity reaction of typhoid on the part of oral than of subcutaneous administration. It must be noted that actual clinical resistance to disease may not correspond accurately with the development of agglutinins or precipitins; indeed, Besredka in his experiments with the rabbit did not find any such correspondence. Moreover, a method that has been so well proved as subcutaneous inoculation against typhoid will not be lightly abandoned. However, there seems to be a growing mass of evidence that oral administration is effective. In cases in which the subcutaneous method has for one reason or another been rejected, oral administration may reasonably be given a trial.

1. Besredka, A.: Local Immunization, Baltimore, Williams & Wilkins Company, 1927, p. 137.
2. Hoffstadt, R. E., and Thompson, R. L.: Immunological Studies of Typhoid Vaccination by Mouth, Am. J. Hyg. **9**: 1 (Jan.) 1929.

Association News

THE PORTLAND SESSION

Cooperating Exhibit on Eye Infections Due to Gonorrhea

Two years ago, the Section on Urology, with the American Social Hygiene Association cooperating, sponsored an exhibit on gonorrhea in the male. Last year, the Section on Obstetrics, Gynecology and Abdominal Surgery, with the same organization cooperating, arranged an exhibit on gonorrhea in the female. To complete the emphasis on the subject of gonorrhea, this year the Section on Ophthalmology has arranged for a special exhibit on eye infections due to gonorrhea; cooperating are the National Society for the Prevention of Blindness and the American Social Hygiene Association.

The section has appointed a special committee on section exhibit, consisting of Arthur J. Bedell, M.D., Albany, N. Y., Harry S. Gradle, M.D., Chicago, and Bernard Samuels, M.D., New York, with B. Franklin Royer, M.D., representing the National Society for the Prevention of Blindness and Walter M. Brunet, M.D., representing the American Social Hygiene Association, who will act as secretary of the committee.

This committee, representing the Section on Ophthalmology and the two cooperating organizations, is preparing an exhibit which will feature the clinical and pathologic evidences of the diseases of the eye acquired from birth infections of gonorrhea or from infections in any period in life. Supplementing this topic will be eye infections due to syphilis, congenital and acquired. To those who desire to take part in this exhibit, the committee suggests that they limit their material to fundamental and essential points. The exhibits of individuals participating in the special exhibit will be open to awards on the same basis as other exhibits.

As the date when all applications for the Scientific Exhibit has passed, the Committee on Scientific Exhibit has assigned a block of space for the use of the Committee on Section Exhibit of the Section on Ophthalmology, which will be allotted to the individual participants in the exhibit dealing with eye infections due to gonorrhea.

Applications for this exhibit should be filed *immediately* with the Secretary of the Committee on Section Exhibit, Walter M. Brunet, M.D., 370 Seventh Avenue, New York City.

MEDICAL BROADCAST FOR THE WEEK

The American Medical Association Morning Health Talks and Evening Health Hints from Hygeia

The American Medical Association broadcasts daily at 10 o'clock in the morning, central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week of April 8 to 13 will be as follows:

April 8. "Sanitary Cleaning," by Dr. R. G. Leland.
April 9. "Correcting Mother Nature's Mistakes," by Dr. R. G. Leland.
April 10. "Methods of Removing Superfluous Hair," by Dr. R. G. Leland.
April 11. "The Convalescent Child," by Miss Mildred Whitcomb.
April 12. "Food Fallacies," and "You Can Seat a Child at a Table, But—," by Dr. R. G. Leland.
April 13. "Medical News," by Dr. J. F. Hammond.

Evening Health Hints from Hygeia at 8 o'Clock, Central Standard Time

April 8. Careless Smokers Are Source of Danger.
April 9. Mental Health Rules.
April 10. Nervous Children Are Subject to Chorea.
April 11. Fasting.
April 12. Relatives a Serious Complication.
April 13. How Motorists Can Avoid Killing "Toto."

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE AND HOSPITALS

Twenty-Fifth Annual Meeting, held in Chicago, Feb. 18, 19 and 20, 1929

DR. RAY LYMAN WILBUR
Stanford University, Calif., in the Chair

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

FEBRUARY 18—MORNING

MEDICAL EDUCATION

The Relationship of Medical Education to the Cost of Medical Care

DR. RAY LYMAN WILBUR, Stanford University, Calif.: Perhaps the medical school is not yet ready to insist on courses of training in economics, government, political science and history, and the relations of medicine thereto; but unless such training and such thinking are soon started the present chaos in medical practice will inevitably make for high charges for the sick and an inadequate return to the physician. The saddest thing that could happen would be an increase in the incompetent, poorly trained, and often sinister persons who now treat a certain percentage of those who are ill. The medical profession must stand for adequate preparation and sound training; but it need not demand abnormal expenditures of time and money to provide elaborate specialized training in all of the fields of medicine for the candidate for the degree of Doctor of Medicine. (This paper will be published in full in THE JOURNAL.)

DISCUSSION

DR. TORALD SOLLMANN, Cleveland: I wonder whether the cost of medical care given by the general practitioner is the important item in the high cost of sickness. Possibly the high cost comes, so far as professional care is concerned, more from the highly specialized specialists; when one gets extra expert care, one, of course, must expect to pay extra high fees. That kind of expert service means a longer course of medical training, not the average course that Dr. Wilbur outlined. I do not know how the average must be paid for but there must be a return in money. In the case of the general practitioner, I doubt whether the cost of medical education has raised the cost of fees to the extent that they become a serious factor. The cost of the medical school is a good deal higher than it used to be, but not in relation to the general value of money. The time put in is somewhat longer, but against that must be set the fact that formerly when a man graduated, he did not, as a rule, make his expenses the year after he came out of the medical school, or the year after he came out of the hospital; he had to wait two, three, four, even five years before he had a practice. At present, I think the time has been greatly shortened. I wonder whether the total time consumed in the present training and the time when the graduate has an active remunerative practice is any longer than it used to be when he had three years in medical school and sometimes a year of internship and then the long span of waiting for business.

DR. GEORGE B. LAKE, Chicago: I believe that the medical curriculum of today qualifies at least 90 per cent of the graduates to handle at least 90 per cent of the cases that they are called on to treat.

The Relationship of Fundamental Laboratory to Clinical Teaching

DR. HANS ZINSSER, Boston: The storm and stress period through which medical education has been passing is largely due to the fact that experimental methods in the medical sciences have begun to come into their own. The introduction of well developed laboratory divisions into the clinical departments has to some extent redefined our obligations and opportunities. The suggestion has been made that research and teaching are incompatible and should be divorced; that the fundamental sciences applicable to practice could be taught far more cheaply and appropriately in direct coordination with clinical procedure and therapeutic application. There are two separate problems involved: one, to what extent the medical student should be taught fundamental principles apart from direct clinical application; the other, in what manner teaching and investigation influence each other. (This paper will be published in full in THE JOURNAL.)

DISCUSSION

DR. B. D. MYERS, Bloomington, Ind.: Dr. Zinsser mentioned that the instructors' beginning salary is the point of attack here. I am not fully convinced that that is true. I remember many years ago as a student in Germany that the young docent would work for years at a mere pittance because there was a $12,000, $15,000 or $18,000 salary ahead which the head of his department was getting and which made a prize for him to shoot at.

DR. E. P. LYON, Minneapolis: The only ideal I have nowadays is the ideal of changing my ideal. I used to have an idea that small classes were better than large ones, but experiments made in Minnesota in various subjects indicated clearly that a class of 100 did better than a class of twelve. We thought that two people to the body in dissection could do better than four, but we found that four did just as well as two. In physiology we tried reducing the time spent in the laboratory and library for half the students and found that they did just as well as the others. Therefore, a great many things that were thought to be true may not be true. All of our old ideals have gone to smash. I am still convinced that the best teaching is done in a research atmosphere. The best influence on a young man's development comes from the atmosphere of research. I agree with Dr. Myers in regard to salaries.

Educational Relations of the Professions

MR. DAVID ALLAN ROBERTSON, Washington, D. C.: To American educational progress, specialization in various academic divisions has contributed greatly. With the increase in specialization, however, has come the danger of one educational unit isolating itself from another. So far have we gone in creating departmental independence that it is regarded as a notable exception when departments cooperate in a study important to each, like the one conducted in this city by professors of mathematics, physics, astronomy and geology. The independent college is constantly facing isolation from graduate and professional schools; and each of the latter from all the educational achievements in other divisions of our academic world. Conscious of the danger, some of these divisions have learned the importance of cooperating in the solution of common problems, especially the colleges and the schools represented in the powerful regional associations. No profession, no educational group in the United States, has made greater progress through

specialization than medicine. It shows in the remarkable achievements of research workers in the departments. It shows in the records of the American Medical Association, the Council on Medical Education, and the Association of American Medical Colleges. It is most important in the record of the profession in establishing criteria, classifying medical schools and promoting medical education. At the same time medicine has sought to guard against isolation from the rest of the educational world. It has sought to learn of advances in other educational fields by inviting to the sessions of one or another of its associations experts in these fields. (This paper will be published in full in THE JOURNAL.)

DISCUSSION

DR. WILMER KRUSEN, Philadelphia: Three other professions have a direct relationship to the health and comfort of the patient; nursing, dentistry and pharmacy. These professions have a definite relationship to medicine, and the closer that relationship is, the more harmonious cooperation there is between them, and the better it is for the patient.

DR. TORALD SOLLMANN, Cleveland: The only way in which we can ever learn anything about these educational processes with which we experiment is by trying to find standards. On the other hand, I feel more and more that these things are so complex that standards, methods of teaching and criteria are not positive; so many variables enter into the problem that it seems hardly possible to find a common factor for them. When a new test is proposed, I cannot help recalling how absolutely sure we were of the last test which was proposed and which it is now proposed to discard. I imagine, however, that the choice lies somewhere in the middle; that these tests and criteria are all experimental; that the problem is perhaps so complex that it cannot be expressed by any simple formula which will show us just what we want to see. But what is a good standard for the medical student? Who is the best man in the class? Who is the man who should be dropped out the first year? Who is the man who should be allowed to go on? How often has a man who seemed utterly hopeless turned out not brilliant but fairly good. The benefit of these tests is to make us think whether the criteria we are using are correct ones.

DR. FREDERICK C. WAITE, Cleveland: There is a moral responsibility in any professional school not to permit a student who is not likely to make good to enter, because the mere fact of failure has an influence on the individual which follows him throughout his life.

DR. WILLIAM C. BORDEN, Washington, D. C.: The tests Dr. Moss has carried on in our institution are experimental. They are directed toward a definite end. Approximately 25 per cent of all students who enter a medical school fail. This is an economic situation as well as a personal one. If there is any way by which this percentage can be reduced, it is just so much to the good. The academic standards of high schools and colleges are not true tests of the student's ability in the medical school. Dr. Moss has been trying to see whether he could devise a test that would show the student's ability to carry on the study of medicine. All of these are made impersonally. Dr. Moss and Dr. Hunter grade the tests without personal knowledge of the men. So far the results seem to be fairly indicative of what the man can do in medical school.

It is rather startling to see how closely they have demonstrated what these men, irrespective of their standing in high school and college, have done when they have entered a medical school.

DR. LOUIS B. WILSON, Rochester, Minn.: The fellows of the Mayo Foundation come to us for approximately four years. One year of that time is spent in research and three years are devoted to clinical work by most of the men. Each man is rated every three months very carefully and confidentially in a report by the head of the department in which he is working; this report comes to the director of the foundation. I think these grades are as carefully made as any I have ever seen. They give not only the fellow's standing in the university and his chances for an advanced degree, but also his chance of being taken on the staff of the Mayo Foundation or the Mayo Clinic; and on them is also made the recommendation which may go to any other university asking for information concerning him as a teacher. There is a very definite and very comprehensive correlation between the work grades given in the Mayo Foundation and the grades received from the national board in the four fundamental branches, anatomy, physiology, physiologic chemistry and pathology. There is also a very definite relationship between the national board grading of the individual men in those four subjects and their standings in medical schools in those subjects. So far I have been able to discover practically no correlation between the grades given in the Mayo Foundation in clinical subjects and the grades made in clinical subjects in the national board examination or in medical school. If we are going to draw any conclusion from this, it would be that we ought to give a little better teaching in those four fundamentals. It seems to me that we do not have evidence that there is a single medical school in the United States that is teaching those four fundamentals in a high grade manner.

DR. G. CANBY ROBINSON, New York: The intellectual attraction that the school can develop will in the end determine the quality of its student body much more than the care of selection that the committee on admissions may exercise.

DR. BERNHARD STEINBERG, Toledo, Ohio: Some one has said that intelligence and common sense do not always go together; that is, the possessor of one quality is not always the possessor of the other. I think that perhaps the capacity to learn and intelligent common sense seldom go together. We have emphasized the capacity to learn, but have not said anything about the very necessary virtue in a physician of the possession of common sense and intelligence.

FEBRUARY 18—AFTERNOON

MODERN TEACHING OF CLINICAL MEDICINE

Teaching of Modern Surgery

DR. DEAN LEWIS, Baltimore: The field of surgery is being extended, but the number of hours assigned to the subject is being reduced. One of the difficulties is bridging the gap between the preclinical and clinical years. This may be done by advancing clinical instruction to the second year, or by giving a series of preparatory or propedeutic demonstrations, which may be preferable because the student's attention will not be diverted from the fundamentals and his attention will be directed to the relation existing between his preclinical and clinical studies. Such a series of demonstrations may be devoted to diagnostic methods, to the action of muscles in relation to the displacement of fragments in fractures, to dislocations and the relation of ligaments to their reduction, to the distribution of lymphatics and their relation to the extension of metastatic growths, to bursae, to the significance of pain and its radiation, to general infections—their classification and clinical course—and to tumors. Students would not come in as intimate contact with patients as later, but their attention would be directed to the relationship between clinical and preclinical studies. During the third year students in the dispensary six days a week for eight weeks have concentrated work, and have a chance to follow patients through the course of a disease, and many can be returned to the dispensary after having left the hospital, so that the results of their treatment can be determined. A student should be made to feel that each patient is his own and that he is responsible for the case. In the third year an attempt should be made to correlate the clinical and pathologic observations, and this should be carried out even more carefully in the fourth year. The student should follow the patient under his care to the operating room, should see the gross specimen when removed and should make a microscopic section and examine it so that he may be able to correlate the entire picture—clinical, gross and microscopic. The patients should be approached from the clinical side and especial emphasis laid on history taking, observation, palpation, percussion and auscultation. The student should attempt to base a diagnosis on clinical observations, resorting to accessory methods only after this attempt has been made.

Pathology is most necessary in the training of a surgeon, and surgical pathology should receive a great amount of attention. Gross material and microscopic sections should be shown so that a definite idea of the gross and the minute may be

had. Medical history should be given during the clinics in order that an interest in the development of operative technic may be traced. It may seem useless to cite the names of those who described clinical syndromes or devised operations, but the suggestion of a name may stimulate the student to review the entire history. Two general clinics a week should be given in order to correlate the cases shown in ward rounds and make it impossible for the student to miss an entire subject or an entire group of subjects. The instructor in charge of the course must carefully outline the subjects to be covered and see to it that, either in clinical demonstrations or in formal lectures, the entire field is covered. The intern year should be continuous in one service. Before entering on this, the student should take a year in the study of general pathology or medicine. Provision must be made in the clinic, outpatient department and laboratory for graduates who wish to pursue further studies. Such courses, however, should continue from four to six months, and only those students should be admitted who are willing to spend this time and take seriously the opportunities offered them.

The Teaching of Medicine

DR. RALPH H. MAJOR, Kansas City, Mo.: We try above all other things to teach the student the technic of taking a history, making a physical examination, carrying out the simpler laboratory tests and then, after these details have been mastered, of proceeding to a diagnosis and treatment of the patient. I stress the fact that the physician should first know the physical symptoms manifested by a patient even if the diagnosis is not apparent, for, once he is sure of his observations, he can usually, by reference to his textbooks, make a correct diagnosis even when the disease is one of which he has never heard. Medicine is not learned by diligent cramming of details over the midnight oil but by what one might term the "episodic method"—the teaching of medicine as a series of episodes, at first perhaps unrelated but later assuming the appearance of a connected story, or a well rounded experience as the episodes multiply. (This paper will be published in full in THE JOURNAL.)

Teaching of Pediatrics in a Modern Hospital

DR. JULIUS H. HESS, Chicago: The ideal children's hospital for teaching purposes is one complete in all of its appointments. The advantages of a university affiliation are immediately evident. The university departmental faculty becomes available for manning the inpatient and outpatient departments. The size of the faculty will, to a certain degree, be dependent on the basis of apportionment as to full or part-time salaried positions and voluntary services. In my own department our budget is ample to provide for one full-time man with the rank of associate who is second in rank in the conduct of the wards and clinical research for the university hospital and a further full-time resident, two half-time instructors, a social service head, a full-time chemist and an ample nursing force in both the inpatient and the outpatient clinics. Further, the department of health of Chicago provides salaries for one full-time resident and two nominally salaried attending men representing each of the four class A schools of Chicago. Ample facilities for bedside instruction have therefore made it possible to devote 112 of 144 hours assigned to pediatrics to clinical teaching, leaving thirty-two hours for didactic instruction. During these latter periods assigned to didactic instruction and more especially in that part having to do with infant feeding and the nutritional disturbances, illustrative cases are also presented. The inpatient and outpatient attending staffs must be viewed as of equal importance. In the further organization of the department we have attempted to give the younger men who show evidence of a desire to advance themselves every opportunity to make progress. While a general understanding exists that an average of three years should be spent before promotion to higher academic rank is to be granted, this rule has been broken repeatedly when individual aptitude has seemed to make it advisable.

From the standpoint of instruction, the outpatient service ranks first in importance in its relation to the various divisions of the department, because it represents a great laboratory, offering at all times opportunity for special and original research on the patient himself. Here the instructor and the student are placed on their own resources for the interpretation of the evidences offered for diagnosis. In the outpatient service great responsibilities are assumed for guarding the patient's welfare. The student should leave this service duly impressed with the fact that accurate and truly scientific interpretations are possible. His contacts here will duplicate many experiences to be met in private practice in future years. I believe teaching fellows to be necessary to progress in all departments. When of good caliber they reflect credit on the institution and are a stimulus to the student. Their importance cannot be overestimated, more especially in otherwise unsalaried departments. Research is of fundamental importance to the teacher; it inspires the worker and all who come in contact with him. Besides their research, they may be of use in raising the standard of service in the outpatient department.

DISCUSSION ON PAPERS OF DRS. LEWIS, MAJOR AND HESS

DR. J. O. POLAK, Brooklyn: The teaching of obstetrics in America has never been given its proper place. A knowledge of surgical diagnosis, and the ability to do minor surgery and to administer first aid in major surgical emergencies would seem to be all that could be reasonably demanded of a young man who has just graduated from medical school. But in the practice of obstetrics there is no problem, however grave, that may not require the services of the neophyte. Fifty per cent of all gynecologic practice is the direct result of obstetric trauma, while a very large percentage of invalidism among women can be traced to the pathologic condition resulting from postabortal and postpartal infections. The graduate in obstetrics should be trained primarily in medicine and in medical diagnosis. In addition to this, he should have a knowledge of the physiology of gestation, the mechanism of labor and the pathologic factors which disturb this normal mechanism and which make labor difficult, besides a familiarity with the danger signals of obstetric emergencies. Does any medical school in this country train its graduates along these lines? As a result of a careful review of the curriculums of these schools, as well as a personal study of their plans of instruction, we can unhesitatingly say no. Everywhere throughout the world it is apparent that the teaching of obstetrics is receiving more and more consideration. Why not take this subject seriously in the United States, increase the number of clinical maternity beds and, during the clinical assignment, have the student, for six or eight or ten weeks, as may be judged best, live in an obstetric atmosphere in the hospital, where obstetric problems can be discussed and demonstrated properly?

DR. W. T. COUGHLIN, St. Louis: We should agree that there is first the undergraduate teaching of medicine and surgery and after that the postgraduate teaching of medicine and surgery. One of the biggest difficulties we have to overcome is to keep the teacher from trying to make the student just as good in his specialty as he is. To fit the student for ordinary practice is our first duty, and if he wants to go beyond that, our facilities should be at his disposal. If we have them to offer, he should be encouraged to come. In the primary years in anatomy, in physiology and in pathology, it is tabu to speak of anything that pertains at all to clinical medicine. Why is that? Is it because most of the teachers in the specialties are not medical men? I agree with Dr. Lewis that the meeting of the whole class under one man who is thoroughly qualified to demonstrate the disease condition is of immense value. I believe we are failing with regard to examinations. I believe that a man should come up for examination when he thinks he is ready. One question is enough to determine whether a man is worthy to appear before the board for his final examination.

DR. W. S. THAYER, Baltimore: What Dr. Lewis and others have said about the desirability of further interrelation between the instruction in the clinical departments and in the fundamental departments is very important. There are many ways in which we could cooperate. The best course I have ever seen of this sort was given by Dr. Maurice Richardson forty years ago, when I was a student at Harvard. Every night in the first year he gave a demonstration in dissection, discussing the practical problems arising from anatomy. It was one of the most instructive and delightful exercises I have ever seen and

one which did not in the least take the student's mind from the study of anatomy to which he was devoting himself at the time. I quite agree with Dr. Lewis that the way to learn the association of a disease with the name of its discoverer is not by teaching one of the symptoms with the name attached to it so much as by interesting the student in what the man did, and that was something that Osler used to do beautifully. I was glad to hear Dr. Major speak of the great importance of the clinical laboratory. It is vitally important that the student should be taught how to do all the simple laboratory procedures himself, and then, in a general way, by example at least, to learn what the other aids are which he can call in, aids which are supplementary but not absolutely necessary in almost every instance, as are the simple laboratory methods. I think it was Mr. Lowell who said that the main function of a university was to promote self-education under guidance; that a good teacher is he who is an inspiring guide. Sometimes I think we put into teaching positions men who never could teach. They are full of ideas, full of thoughts, full of imagination, quiet, gentle, unable to raise their voices before a crowd, unable to squeal when stuck with a pin—men one loves, looks up to and admires, but stumbling blocks in the way of progress. We must give a little more care to the picking of the instructor who shall not only be able to inspire students and be a good observer, but also be able to teach.

DR. RAY LYMAN WILBUR, Stanford University, Calif.: Since I have been trying, as a university president, to discover what the cultural subjects are, I have found that the professors of every subject in the university are convinced that their particular subjects are the cultural subjects required for gentlemen. Cultural includes everything that is done in the right way.

DR. EDWARD L. TUOHY, Duluth, Minn.: Everybody grants that education in medicine continues as long as one remains actively in practice. Some one this morning stated that if a practicing physician did not read the medical journals for three years, he would then be unable to grasp a third of what he did read. Therefore, one cannot entirely grasp this matter of medical education if one ignores what happens to physicians after they leave the institutions of learning and what methods remain available for their year-by-year advancement. I do not know whether I understood Dr. Lewis correctly when he said that he thinks interns would do better to elect one particular subject for all their time. It is hard for one to believe that when one notes the fragmentary knowledge that many of them have in very elementary subjects. I am of the opinion that pediatricians are teaching us more about the application of clinical physiology than any other group in practice. Surgeons are coming to bring a certain amount of it into active practice through a better understanding of anesthesia, and of what is meant by preoperative and postoperative care of the patient. Are we as teachers passing on to our students the feeling that they are going into these hospitals in something more than a perfunctory way to abide by the demands of state licensing boards, and that they have another year of travail in which to get by and carry out our wishes? Do they enter hospitals with a little of the feeling that they are as yet not quite filled up?

DR. DEAN LEWIS, Baltimore: So far as I can see, by the time obstetrics is given all the hours it requires and medicine is given all it requires, surgery might as well retire. Dr. Polak did not offer any solution for the problem of how to keep the professor of obstetrics in obstetrics. Most of them start in obstetrics, become gynecologists, and finally switch to abdominal surgery, and I have even seen them operating on the husbands of their patients. I am quite satisfied that a year in pathology or any subject is better than most of the rotating internships we have, because one does not learn much pediatrics in a few weeks. If a man learns one thing he learns it well. If he is a surgical intern he is not excluded from doing a little pediatrics once in a while; he associates with some of the men in the pediatric service, and tries to learn something from them. The interns I have seen graduating from one continuous service I am sure are a little more profound than the ones that have a rotating service with some very short courses.

(To be Continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Health Officers Appointed.—The state board of health has recently appointed the following as health officers of the counties indicated:

Craighead County, Dr. Herbert H. McAdams, Jonesboro.
Mississippi County, Dr. Flem D. Smith, Blytheville.
Baxter County, Dr. Scott Appleby, Mountain Home.
Marion County, Dr. Lucian M. Weast, Yellville.
Sevier County, Dr. Charles A. Archer, DeQueen.
Lafayette County, Dr. Felix E. Baker, Stamps.
Nevada County, Dr. Jacob B. Hesterly, Prescott.

Society News.—The Phillips County Medical Society, the oldest in the state, celebrated its fifty-eighth anniversary, March 16, at a banquet in Helena; Dr. George W. Eubanks, Wabash, was elected president for the year.——The Benton County Medical Society was addressed, February 12, at Rogers, by the following physicians from Springfield: Allen W. Gifford on "Treatment of Mastoid Disease"; Urban J. Busieck on "Otitis Media from the Viewpoint of the Pediatrician," and Francis T. H'Doubler on chest surgery.——The Craighead County Medical Society was addressed, March 7, by Dr. Charles P. McCracken, Jonesboro, on "Selection and Use of Anesthetics."——The Miller County Medical Society was addressed, February 8, by its president, Dr. James T. Robison, Texarkana, Texas, on "Use of Pituitary Extract in Obstetrics," and by Dr. Preston Hunt, Texarkana, Texas, on "Medical Economics."

CALIFORNIA

Promotions at Stanford.—The dean of Stanford University School of Medicine, San Francisco, reports the following promotions in the faculty:

Dr. Lloyd B. Dickey, to associate professorship in pediatrics.
Dr. William Dock, to associate professorship in medicine.
Dr. Maurice L. Tainter, to associate professorship in pharmacology.
Dr. John Kent Lewis, to assistant professorship in medicine.
Dr. Nelson J. Howard, to instructorship in surgery.
Dr. Andrew B. Stockton, to instructorship in therapeutics.
Dr. John J. Kingston, to associate clinical professorship in pediatrics.
Dr. Mary H. Layman, to associate clinical professorship in pediatrics.
Dr. Otto Barkan, to assistant clinical professorship in surgery (ophthalmology).
Dr. Merrill Mensor, to assistant clinical professorship in surgery (orthopedics).
Dr. James C. Parrott, to assistant clinical professorship in pediatrics.
Dr. Roger B. McKenzie, to clinical instructorship in medicine.
Dr. Edmund J. Morrissey, to clinical instructorship in surgery.

Mohammed Allah Claims to Be a California Graduate.—The associate dean of the University of California Medical School writes that he has received several inquiries concerning "Dr. Mohammed Allah" of India, who is claiming to be a graduate of the University of California Medical School. These inquiries have come from Ohio and Indiana. There is, in fact, no evidence that Mohammed Allah ever graduated from the University of California or ever even attended it, and these headquarters find no record of any physician or medical student by that name. Mohammed Allah is about 50 years of age and claims to have been assisted through medical school by the Kiwanians of the United States. He carries with him many letters of recommendations from school and church officials and states that his intention is to return to India as a medical missionary.

Bills Passed.—The house and the senate have passed house current resolution 11, authorizing the appointment of a committee for the purpose of considering the enactment of effective and uniform laws governing traffic in narcotic drugs. Senate bill 30, requiring all drug stores to be registered with the California State Board of Pharmacy, has been passed by the senate. The house has passed the following bill: House bill 739 creating a department of professional and vocational standards to be headed by a director and to consist of the various boards of examiners, including the board of medical examiners. For the purpose of administration, the registration and clerical work of the department shall be organized by the director, but nothing in the act is to be construed as abolishing any of the boards or their functions except as to the clerical details. The senate has passed the following bills: Senate bill 105, authorizing the board of pharmacy to issue a permit to general dealers in rural communities where there is no registered pharmacist to sell simple household remedies and drugs; senate bill 182,

regulating the sale, possession and use of habit-forming narcotics and other dangerous drugs; senate bill 207, providing that when a defendant pleads not guilty by reason of insanity the court must select two and may select three alienists from the staff of the state hospitals.

Source of Outbreak of Foot and Mouth Disease.—An investigation of the recent outbreak of foot and mouth disease in California by the U. S. Department of Agriculture revealed evidence that the garbage in which the infection entered California was taken from the S. S. *Los Angeles*, which made a South American cruise last fall and took on 18,000 pounds of meat at a South American port. When the ship returned to San Pedro in December, the meat was transferred to another ship, and portions which were discarded finally reached the hog ranch where foot and mouth disease first appeared. The evidence has been referred to legal authorities of the department of agriculture for prosecution of the offenders. The importation of fresh or frozen meat, whether in small cuts or in quarters or trimmings from regions where foot and mouth disease or rinderpest exist, is prohibited. The danger of infection with foot and mouth disease from garbage has long been recognized by veterinary officials. Indications are that the outbreak in California has been fully suppressed. A thorough inspection within a radius of 20 miles of the infected premises since February 16 has failed to show any other signs of the disease. Veterinarians are being maintained in the affected area to suppress any infection that might have escaped the rigorous measures.

Society News.—The San Francisco District Dental Society invited members of the county medical society to a meeting, March 20, at which the Canti Cancer Film was presented by Charles A. Kofoid, Ph.D., of the University of California.——The Trudeau Society of Los Angeles held a symposium on artificial pneumothorax, March 6, at the University Club. The speakers were Drs. Edwin S. Bennett and Charles E. Atkinson, Banning, and John W. Nevius, and Edward W. Hayes, Monrovia.——The Los Angeles County Medical Society was addressed, March 21, by Drs. Henry Herbert on latent asthma; Donald E. Ross, "Suppurative Appendicitis," and Edwin D. Kilbourne, Beverly Hills, "Amebic Liver Abscess."——The annual tournament of the Southern California medical and dental golf associations was held at the San Gabriel Country Club, Los Angeles, March 20. The dentists won. About 175 persons competed. The next medical golf tournament will be at Del Monte, April 20-21, between physicians of northern and southern California.——Dr. Leroy Crummer, Omaha, addressed the Alameda County Medical Society, February 1, on "Importance of the Study of Medical History."——The Santa Barbara County Medical Society was addressed, February 11, by Dr. Verne R. Mason, Los Angeles, on "Damage of the Myocardium."——The San Joaquin County Medical Society was addressed, February 7, by Dr. Robert Glenn Craig, San Francisco, on "Care of the Bladder After Abdominal Operations."——The San Francisco County Medical Society will be addressed, April 9, by Drs. Rodney A. Yoell on "Incomplete or Subtotal Saline Jaundice, with Report of Five Cases"; Theodore L. Althausen, "Present Status of Liver Function Tests," and Stanley H. Mentzer, "Dr. Saxton Pope's Studies of the Gallbladder in African Animals."

CONNECTICUT

Express Company Cooperates.—Through the courtesy of the American Railway Express Company at Hartford, packages containing laboratory specimens from towns throughout the state will receive special attention. They will be marked with a special tag, and on arrival in Hartford will be immediately delivered to the laboratory. Physicians and others who ship specimens so tagged should arrange to have them forwarded on the first train in places where there is no regular express service, explaining to the local agent the need for prompt delivery. The state department of health appreciates the cooperation in the interest of public health.

Semicentennial of Health Department.—During the New England Health Institute in Hartford, April 22-26, a banquet will be given to celebrate the fiftieth year of the Connecticut State Department of Health. The speakers will be Surg. Gen. Hugh S. Cumming, U. S. Public Health Service; George E. Vincent, Ph.D., president of the Rockefeller Foundation; Dr. Edward K. Root, Hartford, and Governor Trumbull. Members of the faculty will be guests of honor. The institute is sponsored by the Yale and Harvard medical schools, the New England state departments of health, and the U. S. Public Health Service. The instruction will include a variety of public health subjects.

Typhoid Still Declines.—Up until March 4, no case of typhoid had developed in Connecticut this year. This three month period has not been without reports of typhoid as far back as 1915. The typhoid situation in Connecticut has been gradually improving for years, as it has in other states. During 1928, eighty-eight cases were reported to the state department of health with ten deaths, giving a fatality rate of 11.4 per hundred thousand of population. This was the lowest death rate from typhoid in Connecticut since 1915, with the exception of 1921, when it was 10.7. Low records do not warrant less vigilance. It is still of the greatest importance that water supplies be protected, that sewage be properly disposed of, that typhoid carriers do not handle food, and that the public continue to practice hygienic and sanitary measures at home and when traveling.

Bills Passed.—The following bills have been passed by the senate: Senate bill 244, providing that the health officer of a town contiguous to any stream or body of water which is not wholly within the limits of said town may have jurisdiction over such stream or body of water in the enforcement of regulations relating to public health; senate bill 478 providing that every physician shall report in writing the names of patients infected with venereal diseases, who are handling foods. The house and the senate have passed senate bill 245, amending the law relating to midwives by permitting midwives to use the fluidextract of ergot, which may be given in a teaspoonful dose only after the expulsion of the intact placenta. The house has passed house bill 892, amending the law relative to the granting of reciprocity to licensees of any state board of medical examiners of the United States or the District of Columbia, or to holders of certificates of the National Board of Medical Examiners who have been in actual practice for a period of three years, by providing that any person holding a certificate of qualification to practice medicine and surgery granted by the National Board of Medical Examiners shall not be required to have been in actual practice for a period of three years. The house and the senate have passed house bill 396, providing for the appointment of two surgeons by the state prison and state hospital superintendents who, with the institution's surgeon, shall comprise a board to examine inmates and, when deemed advisable, to perform operations to prevent further procreation. Senate bill 239, providing that the state department of health may investigate any system of water or ice supply and, after hearing, may prescribe regulations deemed necessary to protect the public health, has been passed by the senate.

DELAWARE

Bills Passed.—House bill 120, directing the recorder of deeds of each county to deliver to the state board of health all books, including indexes and loose leaf binders, relating to births, deaths and marriages, has been passed by the house. The following bills have been passed by the house and the senate: Senate bill 32, amending the law with respect to the sterilization of certain mental defectives by providing that any person who is feebleminded, epileptic or insane, whether confined to any institution supported by the state or at large, may be subject to sexual sterilization, and senate bill 33, amending the law with respect to the sterilization of certain defectives by providing that all habitual or confirmed criminals who have been convicted of at least three felonies are subject to sexual sterilization. The following bills have been passed by the senate: Senate bill 35, permitting the state board of health to create sanitary districts without regard for township or municipal lines, and senate bill 102, authorizing the state board of examiners of graduate nurses to formulate and establish a curriculum and rules for training schools.

ILLINOIS

Bill Introduced.—House bill 89 gives the claims of physicians and surgeons priority in the distribution of the decedent's funds, this priority to be shared with funeral expenses, necessary cost of administration, and cost of hospital care.

Society News.—The Knox County Medical Society, Galesburg, was addressed, March 11, by Drs. Waltman Walters and Harold C. Habein, both of the Mayo Clinic, Rochester, Minn., on genito-urinary conditions, and by Dr. James G. Carr., Jr., Chicago, on cardiac pain.——The University of Illinois College of Medicine, Chicago, is giving graduate courses in surgery, tuberculosis, medicine and neurology to the staff of the U. S. Veterans' Bureau Hospital at Maywood, April 1-18. The instructors are Drs. Lindon Seed, Benjamin Goldberg, Harry A. Singer and George B. Hassin.

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Chicago

Society News.—The Chicago Gynecological Society and the Chicago Medical Society will hold a joint meeting at 185 North Wabash Avenue, April 17, at 8 o'clock; Drs. Channing W. Barrett will speak on "Treatment of Fibroids in Relation to Their Pathology"; Emil Ries, "The Key Fibroid," and Joseph L. Baer on "Use of Forceps"; the discussants will be Drs. William C. Danforth, Evanston, Henry Schmitz, Arthur H. Curtis, Noble Sproat Heaney and Joseph B. De Lee.——Edwin O. Jordan, Ph.D., professor of bacteriology and chairman of the department of hygiene and bacteriology, University of Chicago, gave the annual Cutter lecture of Harvard University Medical School, March 27, on "Epidemiology of Paratyphoid Infections."——A fatal case of smallpox, occurring at 6916 Lakewood Avenue, was announced, March 29; about 100 persons in the vicinity were vaccinated to prevent other cases.——Dr. Fred L. Adair, Minneapolis, addressed the Chicago Medical Society, April 3, on "An Analysis of Obstetrical Cases, with Reference to the Incidence of Scarlet Fever and Puerperal Infection."

"Chaos and Confusion" in Health Administration.—In a radius of 50 miles from State and Madison streets, there are 348 health units in operation. They work under 101 agencies liable to the governments of forty cities, twenty-three towns, 138 villages, 125 townships, five counties and four states. Intricacy, complexity, chaos and confusion are terms used in a 350 page report to describe the administration of public health in the Chicago region by Spencer D. Parratt, who has studied this district for two years under the direction of Prof. Charles E. Merriam, LL.D., of the University of Chicago. A solution of the conflict, inefficiency and waste in the present organization of so many health units is proposed in the formation of a regional board of health by voluntary contact with the states of Illinois, Wisconsin, Indiana and Michigan. Mr. Parratt says that some one authoritative and unified agency must be set up to administer all phases of public health work for the "natural unity" of Chicago and its satellite communities. The report praises the work of the health department of the city of Chicago and the assistance rendered by the U. S. Public Health Service, but censures the smaller communities outside the city limits. The creation of the Chicago Municipal Tuberculosis Sanitarium, however, has destroyed, it is said, the proportion and balance of Chicago's health program. The Chicago Municipal Tuberculosis Sanitarium is said to receive each year in money from taxes more than the entire city health department to fight all other diseases combined. For several years after its creation there was an increased reporting of tuberculosis cases and far better hospitalization and supervision of cases, resulting in a decline in the tuberculosis death rate, but since 1922 the death rate has come up considerably and all indexes show decreased activity, although the budget has increased 62 per cent. Mr. Parratt says further, concerning the numerous health organizations in this area, that the infant, maternity and preschool hygiene programs are actually hindered by the present organization. The confusion and clash of the present system is more clearly defined in the milk and food protection situation, in which the small local agencies prove entirely inadequate. In the water supply and sewage disposal, there is absolute necessity for close cooperation in all sections of this metropolitan region. Separate units still empty raw or poorly treated sewage into natural water courses and many of them use doubtful sources for a water supply when a safe supply might be added with slight effort.

INDIANA

Personal.—Dr. Frederick E. Jackson has been appointed commissioner of health of Indianapolis.——Dr. and Mrs. Rolla W. Campbell, Indianapolis, celebrated their golden wedding anniversary, March 10.

Bill Enacted.—House bill 304, amending the nurses' registration law by providing that two of the three years of training required of nurses shall be spent in a hospital or hospitals, and that one year or a part thereof may be spent in recognized colleges, universities or normal schools or with public health nursing organizations, subject to the approval of the state board of examination and registration of nurses, has become a law.

Society News.—Dr. Virgil H. Moon, professor of pathology, Jefferson Medical College, Philadelphia, addressed a dinner meeting of the Indianapolis Medical Society, March 26, on "Mechanism of Circulatory Collapse Present in Traumatic Shock"; the April 2 meeting of the society was addressed by Dr. Stephen A. Douglass, recently appointed superintendent of Sunnyside Sanatorium, Oaklandon, on juvenile tuberculosis, and by Dr. Eugene B. Mumford, on bone and joint tuberculosis.

IOWA

Bill Enacted.—Senate bill 88, requiring coroners to report immediately to the state bureau of investigation all deaths coming within their jurisdiction, has become a law.

Bills Passed.—The house has passed house bill 58, amending the law relating to the state board of health by providing that the term of the members of the state board of health shall be for five years. Senate bill 105, providing that permits to licensed pharmacists be limited to ten years, has been passed by the senate.

Society News.—The Story and Boone county medical societies held a joint meeting, January 17, at Ames; Dr. Maurice A. Healy, Boone, read a paper on psychoneuroses, and Dr. Mark C. Jones on control of respiratory infections.——The Webster County Medical Society was addressed, January 22, at Fort Dodge by Dr. Clarence W. Baldridge, Iowa City, on clinical differentiation between hyperthyroidism and functional disturbances. Dr. Fred L. Knowles, Fort Dodge, addressed the society, recently, on "Injuries of the Spine," illustrated with motion pictures.

Increase in Mental Patients.—A survey made by the U. S. Department of Commerce with the cooperation of the Iowa Board of Control of State Institutions shows that the five state hospitals for mental patients had 970 first admissions during 1927 as compared with 939 in 1922. The increase in first admissions during this period was relatively greater than the growth of the state's population, as shown by the fact that first admissions in 1927 numbered 40 per hundred thousand population as compared with 38.9 in 1922. The number of mental patients under treatment in Iowa state hospitals has steadily increased from 4,122 on Jan. 1, 1910, to 5,420 on Jan. 1, 1928, and of the latter number 2,986 were males and 2,434 females.

KANSAS

Bill Enacted.—House bill 183, amending the drug act prohibiting the sale of coca and narcotics by providing that the provisions of the act shall not apply to decocainized coca leaves or preparations made therefrom or to other preparations of coca leaves which do not contain cocaine, has become a law.

Sentenced for Illegal Operation.—The board of medical registration and examination revoked the license of Dr. George L. Baughman, Kansas City, February 12, following his conviction on a charge of performing an illegal operation. Dr. Baughman was sentenced by the district court of Wyandotte County, Oct. 8, 1928, to one year in the county jail and to the payment of a fine of $500.

LOUISIANA

State Medical Meeting at New Orleans, April 9-11.—The annual meeting of the Louisiana State Medical Society will be held at New Orleans, April 9-11. The semicentennial of the society will be appropriately celebrated during the meeting. Among the speakers will be Drs. Rudolph Matas, emeritus professor of surgery, Tulane University of Louisiana School of Medicine, and Dr. W. C. Rucker of the U. S. Public Health Service. There will be a banquet, Wednesday evening. Golf matches have been arranged and the winners will receive prizes. There will be scientific exhibits. A copy of the scientific program has not yet been received, but assurances are given that it will be among the best the society has ever had.

MAINE

Bills Enacted.—The following bills have become laws: Senate bill 664, amending the law relating to dental hygienists by requiring applicants to have completed a four year course in a standard high school or its equivalent, and senate bill 669, providing for the licensing and regulation of private hospitals and private houses for the treatment of mentally deranged patients.

Bills Introduced.—House bill 703 and senate bill 695 would abolish the office of coroner. Senate bill 720 amends the law relating to optometry by defining optometry as "the examination of the human eye, without the use of drugs, medicines or surgery, to ascertain the presence of defects or abnormal conditions which may be corrected by the use of ophthalmic lenses, prisms or ocular exercises," and "the prescription or adaptation without the use of drugs, medicines or surgery, of lenses, prisms or ocular exercises to correct defects or abnormal conditions of the human eye or to adjust the human eye to the conditions of special occupations, and the fitting, vending and adjusting of spectacles and eyeglasses with ophthalmic lenses for the betterment of vision."

MARYLAND

Bill Passed.—Senate bill 85, regulating the sale of caustic acids, alkalis and preparations thereof, has been passed by the house and the senate.

Personal.—Dr. Dean Lewis, professor of surgery, Johns Hopkins University School of Medicine, Baltimore, was guest of honor at a dinner in Detroit, March 20. Dr. Lewis spoke on "Arteriovenous Fistula."

Help for the Middleman.—A $1,000,000 fund has been set aside by Mr. Frederick Bauernschmidt, Baltimore, to help persons who are unable to pay the full cost of medical care but are willing to pay as they can. The income of the fund is to be divided among eleven Baltimore hospitals, and after twenty years the principal also in portions varying from one twentieth to one fifth. Mr. Bauernschmidt in 1927 gave $670,000 for the erection and equipment of an addition to the Union Memorial Hospital, which will open in May.

Hearing on Antivivisection Bill.—Among others in attendance at a hearing on the antivivisection bill before the general assembly, Annapolis, March 19, were Drs. William S. Thayer, President, American Medical Association; William H. Welch; William H. Howell; Frank J. Goodnow, LL.D., president of Johns Hopkins University; James M. H. Rowland, dean of the University of Maryland School of Medicine; Alexius McGlannan, president, state medical society; Josiah S. Bowen, Mount Washington, chairman, state legislative committee, and Judge Henry D. Harlan, chairman, board of trustees, Johns Hopkins University. The bill has been defeated.

MASSACHUSETTS

Bills Passed.—The following bills have passed the house and the senate: House bill 53, providing for traveling and other necessary expenses of the board of registration of nurses, and house bill 59, authorizing the department of public health to gather and disseminate public health information.

Society News.—Dr. Stephen H. Blodgett, Boston, read an account of the history of smallpox vaccination since its introduction in this country in 1721 before the South Middlesex District Medical Society, recently.——The April 11 lecture at the State House in Boston, under the auspices of the state department of education and the Massachusetts Society for Mental Hygiene, will be by Dr. Abraham Myerson on "Normal and Abnormal Fear," and the April 25 lecture by Dr. Esther Loring Richards, Baltimore, on "Nerves: Their Meaning in Our Lives."

MICHIGAN

Bill Passed.—The senate has passed senate bill 158, providing for county health districts.

Society News.—The Calhoun County Medical Society, Battle Creek, was addressed, April 2, by Dr. Hugo A. Freund, Detroit, on "Diagnosis, Treatment and Prognosis of Coronary Disease," and by Dr. Awra A. Hoyt, Battle Creek, on diphtheria immunization with demonstration; the Carlson-Luckhardt motion picture on "Intestinal Peristalsis with Experimental Animals" was exhibited.—— The Wayne County Medical Society, Detroit, was addressed, April 2, by Dr. Alexius M. Forster, Colorado Springs, Colo., on "Early Diagnosis of Tuberculosis," illustrated with moving pictures.

Personal.—Dr. Rosingrave M. Eccles, who recently celebrated his seventy-first birthday, has practiced in Blissfield for fifty years.——Dr. Wilfrid Haughey has been appointed chief of staff at Lila Y. Post Montgomery Hospital, Battle Creek. ——The council of the Wayne County Medical Society, Detroit, has terminated the services of Mr. E. E. Valentini as executive secretary of the society.——A portrait of Dr. Frederick G. Novy, professor of bacteriology, University of Michigan Medical School, Ann Arbor, is being painted to be presented to him by the students and faculty on his sixty-fifth birthday, December 9. Dr. Novy has been a member of the faculty since 1887.——Dr. Martin H. Hoffmann has been appointed city psychiatrist of Dearborn.

Dr. Warthin Appointed Russel Lecturer.—Dr. Aldred S. Warthin, professor of pathology, University of Michigan Medical School, Ann Arbor, has been appointed the Henry Russel lecturer at the university for this year. The late Mr. Russel of Detroit gave funds a few years ago to increase the salaries of the teachers, but the income was not sufficient to raise substantially the salaries of so many. The regents in 1925 decided to assign the income annually in equal parts to a lecturer to be nominated by the executive board of the Research Club, and to one of the younger members of the faculties chosen for his attainments and promise of distinction. Dr. Frederick G. Novy of the medical school was the Russel lecturer of 1927. The winner of the 1929 award will be announced at the time of the lecture in May.

MINNESOTA

Personal.—Dr. George T. Caldwell has been appointed pathologist and laboratory director of the Charles T. Miller Hospital, St. Paul; he will also have a teaching position in the University of Minnesota Department of Pathology. Dr. Caldwell formerly was professor of pathology at Baylor University College of Medicine, Dallas, Texas.——The state board of medical examiners at a meeting, February 15, elected Dr. Edward T. Sanderson, Minneota, executive secretary, to succeed Dr. Alfred E. Comstock of St. Paul; Dr. Edward J. Engberg, St. Paul, was recently appointed a member of the board. The offices will continue to be at 524 Lowry Medical Arts Building, St. Paul.

Bills Passed.—The following bills have been passed by the house and the senate: Senate bill 468, amending the law relating to the qualifications for examination for registered pharmacists by providing that the applicant must be a graduate of a recognized college or school of pharmacy and have had at least one year of practical experience in drug stores where physicians' prescriptions are usually compounded before being entitled to be examined, and senate bill 503, providing that after Jan. 1, 1930, there shall be no further examinations for registration and no registration of any person as an assistant pharmacist, but that it shall be lawful for all persons registered as assistant pharmacists prior to that date to continue to act as such. The house has passed house bill 293, providing that feebleminded persons committed to the guardianship of the state board of control, and epileptic persons, may contract marriage with the written permission of the state board of control if, in the opinion of the board, such persons have been rendered sterile.

Bills Introduced.—Senate bill 943 provides that any graduate from a recognized college of chiropractic, who holds a chiropractic license in at least two states, and has practiced in each state at least one year, and who holds a certificate of registration in the basic sciences in one of the states in which he holds a chiropractic license and who at the time of the passage of this act holds a license to practice massage in Minnesota and has practiced as a chiropractor in this state for not less than two years prior to the passage of the basic science law, shall be granted, without examination, a certificate of registration in the basic sciences. House bill 1010 provides that practitioners of naturopathy who have been engaged exclusively in such practice in Minnesota continuously for a period of more than five years prior to Jan. 1, 1929, shall on application to the basic science board be entitled to receive a certificate of registration in the basic sciences without examination. Senate bill 870 and house bill 929 provide that whenever a person has been committed to the state hospital for the insane and has been an inmate there for at least six consecutive months, the board of control after investigation may, with the written consent of the patient or his duly appointed guardian, cause such person to be sexually sterilized. House bill 818 would direct the state board of control to erect a state hospital for the dangerous insane.

MISSOURI

Damages Set Aside.—Judge Falkenhainer, St. Louis, in circuit court, March 7, set aside a verdict rendered by a jury, January 18, assessing a $75,000 judgment against two surgeons whom the plaintiff claimed had left surgical gauze in her body following an operation. According to the St. Louis *Globe Democrat*, Judge Falkenhainer expressed the opinion that the judgment was grossly excessive and the result of passion and prejudice on the part of the jurors.

Society News.—The Trudeau Club presented a program on tuberculosis before the St. Louis Medical Society, March 5; the speakers were Drs. Evarts A. Graham, Jacob J. Singer, Theodore C. Hempelmann, Joseph F. Bredeck, Selig Simon and Howard Bell.—— The Kansas City Eye, Ear, Nose and Throat Society was addressed, March 21, by Dr. Samuel J. Kopetzky, New York; Drs. Kopetzky and Allen Greenwood, Boston, held clinics before the society at the General Hospital. ——The St. Louis Medical Society was addressed, March 26, by the executive secretaries of two societies which were among the first to create that office, Mr. William J. Burns of the Toledo Academy of Medicine and Mr. H. Van Y. Caldwell of the Cleveland Academy of Medicine. The society was addressed, March 12, by Dr. Daniel N. Eisendrath, Chicago, on "Diagnosis and Treatment of Cystitis," and held a symposium on headache, February 26; the speakers were Drs. Charles H. Neilson,

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George Gellhorn, Clarence O. Simpson, Roland M. Klemme, Adolph H. Conrad, John Green, Jr., and Arthur M. Alden.—— Dr. Francis M. Pottenger, Monrovia, Calif., addressed the Jackson County Medical Society, Kansas City, March 26, on "Disturbances of the Vegetative System in Visceral Disease"; held a tuberculosis clinic at the Kansas City General Hospital, and addressed the upper classmen at the University of Kansas Medical School.——Dr. Malcolm L. Harris, Chicago, President Elect of the American Medical Association, addressed the Jackson County Medical Society, April 2, on "Economic Trends in Medical Practice"; Dr. Franz Hasslinger, Vienna, addressed the society, March 26, on "Differential Diagnosis of Carcinoma, Tuberculosis and Syphilis of the Larynx."

NEBRASKA

Society News.—Dr. Hugh Cabot, dean and professor of clinical surgery, University of Michigan Medical School, Ann Arbor, addressed the Omaha-Douglas Counties Medical Society, February 5, on "Avoidance of Surgical Operations, Particularly in the Abdomen." —— A graduate course in pediatrics and obstetrics will be held, May 6-13, at the University of Nebraska College of Medicine. The classes will be limited to twenty-five and registrations must be made by April 10; the fee is $10.

NEW JERSEY

Bill Introduced.—House bill 380 amends the law relative to chiropractic by providing that any person holding a valid license to practice chiropractic shall be authorized to use in connection with hand manipulation and adjustment such adjuncts, substitutes or other means or methods in conjunction with chiropractic treatment, without the use of drugs, as may be essential or necessary to conform to the modern methods of treatment.

Bills Passed.—The house and the senate have passed senate bill 17, amending the pharmacy law by requiring of assistant pharmacists two years of study in a school of pharmacy. The following bills have been passed by the house: House bill 54, providing for the sexual sterilization of insane, feebleminded, and epileptic inmates of state institutions, and house bill 257, amending the law regulating the practice of midwifery by providing that the board may suspend licenses.

NEW YORK

Bill Introduced.—Senate bill 1546 provides that no person other than a public officer with the legal authority to do so or corporation duly formed for the purpose shall establish a maternity hospital, lying-in asylum or other institution or place where women may be received, cared for and treated during pregnancy without first obtaining a license to conduct an unincorporated maternity hospital from the health officer of the local health district.

Society News.—The third series of lectures under the Harrington Foundation at the University of Buffalo was given by Dr. Roy G. Hoskins, director of the Memorial Foundation for Neuro-Endocrine Research at Harvard University Medical School, April 4, on "Interrelations of the Endocrines" and, April 5, on "Practical Endocrine Therapy."——A course for dental hygienists will be given at State Teachers College, Buffalo, July 1-9, for those wishing to qualify as dental hygiene teachers in the state. Another course at the same time aims to meet the requirements for certification as a dental hygiene teacher and school nurse. Tuition is free for residents of New York. Information will be furnished by Stanleigh R. Meaker, D.D.S., of the state education department, Albany. —— The Cortland County Medical Society was addressed, March 20, by Dr. Lewis C. Wagner, New York, on "Treatment of Malunion and of Nonunion in Fractures."

Hospital News. — The board of managers of the Buffalo City Hospital instituted an inquiry into the affairs of the hospital which was made public, March 2; the report recommends the elimination of the board of managers and the city welfare board and the establishment of a welfare department which shall include the city hospital, the J. N. Adam Memorial Hospital and the existing department of social welfare. The hospital work of the city then would be under the direction of a commissioner and would be in about the same position as other city departments maintained by taxpayers. The voters in 1927 defeated a referendum for funds to enlarge the hospital.—— Schenectady County dedicated a new $500,000 Tuberculosis Sanatorium, February 7; the president of the county medical society, Dr. Joseph N. B. Garlick, Schenectady, among others, gave an address. The institution has 138 beds, sun parlors, a water filtration plant, a sewage disposal system, and a central heating plant and is otherwise modern.

Care of Mental Patients.—New York last year awarded more than $21,000,000 in contracts for new construction and improvements in state institutions for the care of mental diseases, and in the preceding year more than $13,000,000. A site was purchased in 1928 for a hospital on Long Island; two buildings were erected at the Creedmoor division of the Brooklyn State Hospital, and new buildings were occupied at Harlem Valley State Hospital. The psychiatric institute at the Medical Center in New York was practically completed, and the veterans' hospital at Kings Park State Hospital was finished and occupied. Dr. Frederick W. Parsons, commissioner of mental hygiene, in his report to the governor, states that the number of patients under treatment during the year in the fourteen civil state hospitals for the insane was 58,354; in the four state schools for mental defectives, 9,124; and in Craig Colony, the institute for epileptic patients, 1,890. The per capita cost of maintaining patients in the state hospitals was $404.65. Occupational therapy has been generally introduced in these hospitals as a method of treatment.

Bills Passed.—The house and the senate have passed house bill 1762, eliminating ambulances from the vehicles defined as motor vehicles and providing that no registration fee shall be paid for motor vehicles which are especially constructed to carry the sick and the injured. The following bills have been passed by the house and the senate: House bill 77, making the sale of any beverage containing wood alcohol or other poisonous substances a felony, punishable by a minimum imprisonment of five years; house bill 186, amending the civil practice act by providing that an order to produce hospital records in court must be served at least five days before the day fixed for the production of such records in court; house bill 566, amending the health law by making it a felony to sell or distribute habit-forming drugs, and providing for a term of imprisonment not to exceed ten years, and house bill 596, amending the health law relative to the duties of health officers by eliminating the duty of examining school children. The following bills have been passed by the house: House bill 435, penalizing the possession of narcotics by imprisonment for not less than five nor more than ten years; house bill 927, exempting from the provisions of the tax law all real property from which no income is derived belonging to the medical society of any county and which property is situated within any city containing a population of 117,000; house bill 1526, amending the public health law, in relation to habit-forming drugs, by declaring any unauthorized possession, control over, sale, barter, exchange, distribution, prescribing, peddling, administering or dispensing of habit-forming drugs to be dangerous to public health, and house bill 1528, creating a board of examiners for dental technicians.

New York City

University News. — Albert Brachet, professor of anatomy and embryology, University of Brussels, and director of the Institute of Anatomy, lectured at Cornell University Medical College, February 18 and 20, on "Activation and Fertilization of the Egg" and "Heredity as an Embryologic Process."

Dr. Symmers Appointed Director of Laboratories. — The commissioner of hospitals, Dr. William Schroeder, Jr., announces the appointment of Dr. Douglas Symmers as general director of laboratories, and of Dr. Armin V. St. George as assistant director. Dr. Symmers will have charge of the reorganization and supervision of the laboratories of the twenty-six hospitals included in the new organization.

Society News. — The Medical Society of the County of Kings was addressed, March 19, by Dr. Cecil K. Drinker of Harvard University Medical School on "Physiologic and Clinical Aspects of Resuscitation," and by Yandell Henderson, Ph.D., of Yale University on "Physiologic Aspects of Inhalation"; Dr. John J. Wittmer of the Brooklyn Edison Company gave a demonstration of resuscitation and inhalation.

Koba Wants to Be an Intern.—A Japanese by the name of Mr. Lawrence Koba has been seeking a hospital internship in the city under the claims, it is reported, that he was formerly an intern at Johns Hopkins Hospital, Baltimore, a graduate of Johns Hopkins University School of Medicine, and a member of Phi Beta Kappa. Koba is not a graduate of Johns Hopkins but was dismissed from that school after a short period of attendance because of his poor standing, and he is not a member of Phi Beta Kappa.

Oldest Hospitals Merge.—The New York Hospital and the Lying-In Hospital have agreed to merge and become a part of the project of the Society of the New York Hospital for teaching and research in the New York Hospital-Cornell Medical College Association. The agreement provides, says the

New York *Times*, that about $8,000,000 will be available to build and carry on a maternity hospital, which will be part of the new plant of the society overlooking the East River between Sixty-Eighth and Seventieth streets. J. P. Morgan and the Laura Spelman Rockefeller Memorial have given $2,000,000 each toward the maternity hospital, and George F. Baker and George F. Baker, Jr., each $1,000,000, while the remaining $2,000,000 will come from the assets of the Lying-In Hospital. Graduate work for physicians and special training for nurses will be a feature of the work. Adjoining the maternity hospital of 160 beds will be a pediatric hospital of 150 beds. It will be about two years before the Lying-In Hospital is completed. The two institutions were closely associated as far back as 1801, when an arrangement was made to maintain the patients from the Lying-In Hospital in a ward in the New York Hospital, then on Broadway between Duane and Worth streets. That arrangement continued until 1827.

NORTH DAKOTA

Bill Enacted.—Senate bill 175, amending the law relative to the North Dakota tuberculosis sanatorium by making its facilities available for the prevention of tuberculosis as well as for its treatment, has become a law.

OHIO

Bills Passed.—The house has passed house bill 13, requiring municipalities or townships to furnish medical, hospital and quarantine services to indigent persons, and house bill 236, amending the law relative to pharmacy by discontinuing examinations for assistant pharmacists.

Hospital News.—The City Hospital of Akron is constructing an $800,000 surgical building.——The Cincinnati Tuberculosis Sanatorium dedicated a new sixty-six bed building, February 3.——The construction of a 150 bed infirmary for the U. S. Veterans' Bureau Hospital at Chillicothe has been approved by the President.——Residents have subscribed $350,000 for the enlargement of Mercy Hospital at Canton.

Society News.—Dr. Horace LoGrasso, Perrysburg, N. Y., addressed the Toledo Academy of Medicine, March 1, on "Use of Light in Treatment of Tuberculosis."——The Academy of Medicine of Cincinnati was addressed, February 4, by Dr. Lawrason Brown, Saranac Lake, N. Y., on "Diagnosis of Pulmonary Tuberculosis for the General Practitioner."——The Clark County Medical Society was addressed, January 21, by Dr. Albert H. Freiberg, professor of orthopedic surgery, University of Cincinnati College of Medicine, and president elect of the Ohio State Medical Association, on "Purposes of Organized Medicine."——Among others, Dr. Claude S. Beck addressed the Academy of Medicine of Cleveland, February 8, on "Effect of Dakin's Solution in the Pericardium."——The Mahoning County Medical Society, Youngstown, was addressed, January 24, by Dr. John A. Lichty, Clifton Springs, N. Y., on "Achylia Gastrica."——The Perry County Medical Society was addressed, January 21, New Lexington, by Dr. Charles H. Higgins, Zanesville, on "A Plea for Conservatism in Obstetrics."——At the annual meeting of the Dayton Academy of Medicine, February 22, Dr. Charles H. Mayo, Rochester, Minn., was listed to speak on "Changes in Modern Medicine and Recent Developments of Investigative Methods of Research"; Drs. George W. Crile, Cleveland, and Martin H. Fischer, Cincinnati, led in the discussion. Among other prominent persons at the speaker's table was Orville Wright, Dayton.——The Summit County medical and dental societies met jointly, April 2, at Akron; Dr. Robert A. Keilty, Washington, D. C., of the U. S. Veterans' Bureau, spoke on "Gingivitis: An Infectious Entity."

OREGON

Changes in Faculty.—The following changes in the faculty of the University of Oregon Medical School have been approved by the board of regents of the university:

Dr. Clarence J. McCusker, appointed clinical professor of obstetrics and head of the department.
Dr. Raymond E. Watkins, appointed clinical professor of gynecology and head of the department.
Dr. Frederick A. Kiehle, appointed professor of ophthalmology and head of the department.
Dr. John F. Dickson, appointed emeritus professor of ophthalmology.
Dr. Ralph A. Fenton, appointed professor of otolaryngology and head of the department.
Dr. Lyle B. Kingery, appointed clinical professor of dermatology and head of the department.
Dr. J. C. Elliott King, appointed emeritus professor of dermatology.
Resignation of Dr. Wilmot C. Foster, assistant professor of anatomy, accepted.

PENNSYLVANIA

Bill Enacted.—Senate bill 5, authorizing counties to maintain hospitals for the treatment of women with nervous diseases, has become a law.

Bills Passed.—The following bills have been passed by the house: House bill 7, providing that any resident, indigent, ex-service man shall be treated by any hospital receiving financial aid from the state, the expense of such treatment to be borne by the state, and house bill 316, creating a board of barber examiners and regulating the occupation of barbering.

Westmoreland's Annual Clinic.—The annual clinic of the Westmoreland County Medical Society will be held at Greensburg, May 9, at 2 p. m., followed by a banquet in the evening at the Greensburg Country Club. The clinicians will be Drs. Samuel W. Lambert and John F. Erdmann, both of New York. Physicians from neighboring county societies are cordially invited.

Bills Introduced.—House bill 1832 provides for the direct payment to hospitals by defendants in actions for personal injury of such part of verdicts against them as represent services rendered by such hospitals. House bill 1795 provides that every physician shall render his services in all maternity cases when such services are engaged at least three full days prior to confinement and that each physician shall have a standard or fixed fee for such services and shall not charge any person in excess of such fixed fee.

Philadelphia

Personal.—Dr. Edward B. Krumbhaar attended the meeting of the Osler Club in London, England, February 14, at the home of Dr. Geoffrey L. Keynes.——Dr. Joseph B. Potsdamer celebrated the fiftieth anniversary of his graduation from medical school, March 21.

RHODE ISLAND

Personal.—Dr. Arthur P. Noyes, Washington, D. C., until recently assistant superintendent of St. Elizabeth's Hospital, has been appointed superintendent of the Rhode Island State Hospital for Mental Diseases in Providence.

Bills Introduced.—House bill 792 makes it the duty of the state board of health to keep a register of all persons who are known to be affected with tuberculosis in any form, and provides that the state board of health shall have custody of this register and give or withhold such information as in the opinion of the state board of health is deemed advisable. House bill 850 amends the law requiring all attendants in public or private schools in the state to furnish the certificate of a physician certifying successful vaccination or a certificate from a physician stating that such person is not a fit subject for vaccination by providing that a certificate granting exemption from vaccination shall not be valid for more than two months from the date of issue. House bill 912 would require physicians to report gunshot wounds coming to their attention. House bill 920 would create a state public health commission and the office of state director of the public health. House bill 941 would require all practitioners of medicine to register annually with the state board of health. House bill 1021 provides for the appointment by the governor of an inspector of public bathing beaches. Senate bill 84 authorizes the state board of health to appoint a physician to study local and rural health problems.

TENNESSEE

State Medical Meeting at Jackson, April 9-11.—The ninety-sixth annual meeting of the Tennessee State Medical Association will be held at Jackson, April 9-11, under the presidency of Dr. Kirby S. Howlett, Franklin. Jackson is on a main highway, 150 miles from Nashville, and 85 miles from Memphis, and it has five railroads, three colleges, and a new hotel. The scientific program will be presented largely by Tennessee physicians, some of their subjects being the bacteriophage; use and abuse of endocrine therapy in children; hypothyroidism in the adult; use of radium and roentgen ray in diseases of the female pelvis; diagnosis and treatment of pulmonary tuberculosis in children, and foreign bodies in the food and air passages. The guest speakers will be Dr. William S. Thayer, Baltimore, President, American Medical Association, Tuesday evening; Dr. Joseph A. Stucky, Lexington, Ky., on "Responsibility of Ophthalmologists and Otolaryngologists for the Conservation of Health," and Dr. Charles S. McVicar, Rochester, Minn., on diagnosis and management of common disorders of the biliary tract. There will be medical moving pictures. Jackson has a splendid golf course.

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TEXAS

Bill Enacted.—House bill 309, requiring physical education courses to be taught in public schools, has become a law.

Hospital News.—An emergency city-county hospital established at Collingsworth last December, during the influenza epidemic, was immediately filled with patients. Although temporary, it may lead to the establishment of a permanent city-county hospital.——The city of Austin dedicated a new hospital, January 6, which was provided for by a $100,000 bond issue.

WASHINGTON

Bill Enacted.—House bill 413, giving contracts of physicians and of hospital associations preferred claim for medical aid in bankrupt firm cases for industrial insurance, has become a law.

WISCONSIN

Bill Introduced.—House bill 545 requires producers of ginseng to report to the Department of Agriculture the number of pounds of ginseng sold and the amount received therefor.

Milwaukee Desires a Medical Director.—The Milwaukee County Civil Service Commission announces an examination, April 18, at its office, 470 Jefferson Street, Milwaukee, for the position of superintendent and medical director of the Milwaukee Asylum for Chronic Insane, and also an examination for the position of assistant superintendent to be in charge of the new emergency-dispensary unit of the Milwaukee County Hospital. The examination will be oral. Applicants should be graduates of a recognized medical school, with at least six years of practical experience in the care and treatment of the insane. The salary ranges from $3,000 to $4,000 a year with full maintenance for self and family, and $200 for automobile allowance. The salary for the assistant superintendent of the dispensary-emergency unit will be $6,500. Applicants for this position should have had at least six years' practical experience in the practice of medicine and surgery.

Society News.—The Medical Society of Milwaukee County, Milwaukee, was addressed, March 8, by Dr. Udo J. Wile, professor of dermatology and syphilology, University of Michigan Medical School, Ann Arbor, on "Unusual Phases of Visceral Syphilis of Interest to the General Practitioner," and by Dr. Albert C. Furstenberg, associate professor of otolaryngology at Michigan, on "Visualization of the Lower Air Passages with Radiopaque Substance."——The Milwaukee Academy of Medicine was addressed, March 26, by Dr. Walter C. Alvarez, Mayo Clinic, Rochester, Minn., on "Why Food Goes Down the Bowel"; Dr. John R. Davis, Toledo, addressed the academy, March 12, on "Old Ideas Newly Applied in Most of the Common Fractures," illustrated with moving pictures.——Dr. Clarence C. Stein, Chicago, has been appointed assistant to the director of the medical department of the Kohler Company and as physician to the village of Kohler.——A new 100-room addition has been added to the Sacred Heart Sanatorium, Milwaukee, making the capacity now 500 beds.——The Marathon County Medical Society was addressed, January 23, by Dr. John W. Harris, Madison, on "Treatment of Puerperal Sepsis," and by Dr. Roger C. Cantwell, Shawano, on "X-Ray Diagnosis in Diseases of the Stomach."——Dr. Harry M. Richter, Chicago, recently addressed the Milwaukee Academy of Medicine on "The Pathology of Goiter."——The Milwaukee Oto-Ophthalmic Society was addressed, February 19, by Dr. Peter Kronfeld, Vienna, on the diagnosis of glaucoma.——The Wisconsin Surgical Club recently went to Cleveland and Cincinnati to visit clinics.

GENERAL

American Board of Ophthalmic Examinations.—The next examination of this board will be held at Portland, Ore., July 8, during the annual session of the American Medical Association. The following examination will be held in Philadelphia, October 21, during the meeting of the American Academy of Ophthalmology and Otolaryngology at Atlantic City. The secretary of the board is Dr. William H. Wilder, 122 South Michigan Avenue, Chicago.

Society News.—At the Chicago meeting of the American Conference on Hospital Service, Dr. Harry E. Mock, Chicago, was made president for the year, and Dr. Frank Billings, honorary president. Among the speakers were E. H. Lewinski-Corwin, Ph.D., New York, on "Convalescent Centers," and Dr. Newell C. Gilbert, Chicago, on "Cardiac Convalescents."——About 800 persons attended the annual meeting of the American Orthopsychiatric Association, New York, February 22-23. Dr. Frederick H. Allen, Philadelphia, read a paper on the philosophy of treatment in child guidance and Clifford R. Shaw, Ph.D., Chicago, study of crime in the loop and adjacent districts in Chicago. Dr. Lawson G. Lowrey, New York, was reelected president. The next annual meeting will be in New York, Feb. 21-22, 1930.——At the thirtieth annual meeting of the American Therapeutic Society, Pittsburgh, April 5-6, under the presidency of Dr. Edwin Bosworth McCready, whose address was on the therapeutic management of epileptic patients, Dr. Paul Titus, Pittsburgh, among others, spoke on "Dextrose Solutions for Intravenous Injection: Technic of Preparation and Administration"; Drs. Martin G. Vorhaus and Jerome A. Marks, New York, "Bile Salts in Treatment of Biliary Tract Disease," and Dr. John M. Thorne, Pittsburgh, "The Tried and True from the Older Pharmacopeias."

Unusual Prevalence of Meningitis.—Reports have been received from several widely separated communities that indicate that epidemics of cerebrospinal meningitis have been unusually prevalent for several months. The New York City department of health reported there had been 162 deaths up to March 16 this year, as compared with forty-five in the corresponding period of last year. The disease began to increase in New York early in 1928 and, contrary to other years, the health department says, continued throughout the summer and fall. The department of health of Detroit also notes an unusual prevalence of meningitis for several months, with an extremely high case fatality rate (70 per cent). Detroit has detailed three nurses to take cultures from contacts, of whom there were 414 connected with 100 consecutive cases reported to the health department. Of these contacts 57 per cent were found to harbor the meningococcus in the nasopharynx, and in some families all contacts were found to have been carriers. THE JOURNAL noted an epidemic of cerebrospinal meningitis in San Francisco, March 16, which seemed to have been traced to Filipinos arriving from the Orient. The increase in meningitis is apparently widespread. The U. S. Public Health Service reported that the incidence for January was the highest since 1918, with a general tendency toward an increase in all parts of the country.

The Automobile Toll Over a Period of Years.—The ever increasing toll of automobile accidents excites wonder as to what has been the cost in human life over a period of years. On request, the chief statistician for vital statistics of the U. S. Department of Commerce, Dr. T. F. Murphy, has furnished the figures as far back as 1906, when the department began to list separately automobile deaths in the registration area of the United States. The accompanying table shows the number of automobile deaths annually from 1906 to 1927 in the registration area, the rate per hundred thousand of estimated population, and the percentage of the total population which lived in the registration area of continental United States. The total number of persons killed was 160,711. If the rate of automobile deaths per hundred thousand of population had been the same in the entire population that it was in that part which dwelt in the registration area, the number of automobile deaths in continental United States from 1906 to 1927 would have been 194,049. The figures of the department of commerce do not include deaths due to collisions of automobiles with railroad trains and street cars, nor deaths due to motorcycle accidents.

Deaths from Automobile Accidents in the Registration Area in Continental United States

Calendar Year	Number of Deaths	Rate per Hundred Thousand of Estimated Population	Percentage of Total Population in Registration Area
1906	183	0.4	48.9
1907	294	0.7	49.2
1908	393	0.8	52.5
1909	632	1.2	56.1
1910	980	1.8	58.3
1911	1,291	2.2	63.2
1912	1,758	2.9	63.5
1913	2,488	3.9	65.5
1914	2,826	4.3	67.2
1915	3,978	5.9	67.5
1916	5,193	7.3	70.8
1917	6,724	9.0	73.4
1918	7,525	9.3	78.5
1919	7,968	9.4	81.1
1920	9,103	10.4	82.2
1921	10,168	11.5	82.2
1922	11,666	12.5	85.3
1923	14,411	14.9	87.6
1924	15,528	15.7	88.5
1925	17,571	17.0	89.4
1926	18,871	17.9	89.8
1927	21,160	19.5	91.3

CANADA

Illegal Practitioners in Saskatchewan.—There are said to be fifty-three drugless healers practicing illegally in Saskatchewan. A bill was introduced in the legislature providing that the examining board for drugless practitioners consist of two osteopaths, two chiropractors and the president of the University of Saskatchewan. Last year eleven drugless practitioners tried the examination and only one passed. The legislature, after discussing the bill on two occasions, left the examining board as it is, to consist entirely of members of the faculty of the university, but the time was extended to May 1, 1930, for taking the examinations for drugless healers who have been practicing in Saskatchewan before May 1, 1927.

Dr. Shepherd Honored.—On his seventy-seventh birthday, friends of Dr. Francis J. Shepherd, president of the Art Association of Montreal, presented him with a bronze bust of himself. Not only has Dr. Shepherd had a distinguished career as a practitioner, from which work he retired some years ago, but he has taken a prominent part in community affairs. In expressing appreciation of this memorial of his service to art, he recalled the opening of the present art building in 1912 and the formation of the art association in 1860. He said the building is free of debt, but that there is a need of money for buying pictures. THE JOURNAL regrets to announce that since this item was prepared a report of the death of Dr. Shepherd on January 18 has been received.

Society News.—The patrol ship *Arras*, which the Canadian government operates for the benefit of fishermen on the Grand Banks, treated more than 300 persons during the last season and removed twelve patients either to a hospital on shore or to their homes; sixty-five minor operations were performed on the ship.——The Canadian Public Health Association has become the owner and publisher of the *Canadian Public Health Journal*, which was published for years under private ownership of the York Publishing Company and since 1920 jointly by them and the association. The president of the association for the ensuing year is Dr. Norman M. Harris, chief, laboratories of hygiene of the department of pensions and national health, Ottawa, Ont.——The Toronto Academy of Medicine was addressed, February 5, by Dr. Frederick A. Cleland on radium in gynecology, and Dr. Robert T. Noble, on review of the medical and narcotic drugs acts.——Dr. Henry J. Gerstenberger, professor of pediatrics, Western Reserve University School of Medicine, Cleveland, gave a demonstration of the moving picture as a method of teaching in pediatrics before the Academy of Medicine of Toronto, March 5.——The annual meeting of the Canadian Medical Association will be held at Montreal, June 17-21.

FOREIGN

Plague in China.—Dr. Percy Watson writes from the province of Shansi, China, that little attention was given to the first outbreak of plague, but it increased gradually and in 1894 appeared in the city of Canton, where it caused more than 60,000 deaths. It spread to India and over the world. Last fall, it appeared again in the mountains of western Shansi and infected seventy villages, causing about 2,000 deaths up to the last of November. Some of these were due to pneumonic plague. Dr. Watson says that a vaccine has been worked out which gives immunity to more than half of those inoculated.

Hundredth Anniversary of Billroth's Birth.—The Vienna Academy of Sciences, the Faculty of Medicine of the University of Vienna, and the Society of the Physicians of Vienna will join in a celebration, April 9-11, of the hundredth anniversary of Theodor Billroth's birth. Interest will be felt by the large number of physicians who were pupils of the master. Representatives of medicine will unite with followers of the absolute sciences to do homage to the memory of the scientist Billroth. The Faculty of Medicine will recall its great debt to the teacher Billroth as the founder of a school whose members are still active as teachers of surgery. The Society of the Physicians of Vienna owes its headquarters—the Billroth-Haus—to a great extent to its master's energy and sacrifice. Garrison speaks of Billroth as the pioneer of visceral surgery. He made the first resection of the pylorus for cancer which was successful, the first resection of the esophagus, and the first complete excision of the larynx. He wrote a volume on surgical pathology and therapeutics which was translated into almost every modern language. His death occurred in 1894.

CORRECTION

"Bacteria and Fecal Fat."—In the editorial with this title, published in THE JOURNAL, March 23, the words "1.5 Gm. a day" should read "1.5 Gm. a week."

Government Services

Examination for Entrance to Public Health Service

Surgeon General Cumming announces an examination of candidates for commission as assistant surgeon in the regular corps of the U. S. Public Health Service, April 29, to be held in Washington, D. C., Chicago, New Orleans, San Francisco and New York. Candidates must be between 23 and 32 years of age, graduates of a reputable medical college, and with one year's hospital experience or two years in practice. Requests for information should be addressed to the surgeon general, U. S. Public Health Service, Washington, D. C.

Transfers in the Navy

The following transfers of medical officers in the navy were made recently:

Lieut. Joash I. Yohannon from first brigade, U. S. Marines, Haiti, to receiving barracks, Hampton Roads, Va.
Lieut. Ben Hollander from U. S. S. *Tulsa* to Destroyers Squadrons, Battle Fleet.
Lieut. Isaac B. Polak from the Navy Medical School, Washington, D. C., to submarine base, Pearl Harbor, Hawaii.
Capt. Lewis H. Wheeler from the Navy Hospital, New York, to the navy medical supply depot, Brooklyn.
Lieut. Clark T. Alexander from the submarine base, Pearl Harbor, Hawaii, to the Navy Air Station, San Diego, Calif.
Lieut. Comdr. John B. Farrior from receiving ship, San Francisco, to the Navy Hospital, Newport, R. I.
Lieut. Henry C. Kellers from the second brigade, U. S. Marine, Managua, Nicaragua, to the Navy Hospital, San Diego, Calif.
Lieut. Oliver A. Smith from the Navy Hospital, Norfolk, Va., to Navy Station, Tutuila, Samoa.
Capt. Charles C. Grieve has been ordered home to await further orders.
Lieut. Roy W. Hayworth from the Navy Hospital, League Island, Philadelphia, to the public health service, Haiti.
Lieut. Frank W. Quin from the Navy Hospital, Canacao, to the U. S. S. *Asheville*.
Lieut. Comdr. Grover C. Wilson from the Aircraft Squadrons, East Coast, expeditionary force, U. S. Marines, Quantico, Va., to marine barracks, Quantico, Va.
Lieut. Comdr. George T. Dill to marine barracks, Quantico, Va.
Lieut. William R. Whiteford from the navy hospital, Newport, R. I., to the Navy Medical School, Washington, D. C.
Lieut. Walter G. Kilbury from the receiving ship, San Francisco, to the navy recruiting station, Buffalo.
Lieut. Carl H. McMillan from the navy hospital, Boston, to the navy recruiting station, Boston.
Lieut. Comdr. Howard R. McCleery to the navy hospital at Canacao.
Lieut. Charles H. Allman resigned from the service, effective March 30.
Lieut. Comdr. William R. Levis has tendered his resignation from the service.
Lieut. Clyde M. Longstreth to the first brigade, U. S. Marine, Haiti, for duty involving flying.
Comdr. Howard F. Lawrence to the marine corps base, naval operation base, San Diego.
Lieut. Comdr. George B. Dowling to the naval radio station, San Juan, Porto Rico.
Lieut. Comdr. Lynn N. Hart to the receiving ship, San Francisco.
Capt. Charles E. Riggs to duty as chief of the bureau of medicine and surgery.
Lieut. Comdr. Toson O. Summers to naval station, St. Thomas, Virgin Islands.
Lieut. Jesse D. Jewell to the naval hospital, New York.
Lieut. George W. Cooper to the navy hospital, League Island, Philadelphia.
Lieut. Comdr. James W. Ellis to the U. S. S. *Sacramento*.
Lieut. Desse A. York to the marine receiving station, New Orleans.
Capt. Ulys R. Webb to duty at the navy hospital, Puget Sound, Washington.
Lieut. Nathan C. Robey has had his resignation accepted, effective, April 11.
Capt. Albert J. Geiger and Lieut. DeWitt T. Hunter to the receiving ship, San Francisco.
Capt. Theodore W. Richards to the Navy Hospital, Washington, D. C., as medical officer in command.
Lieut. Comdr. Cary D. Allen to the navy hospital, Portsmouth, N. H.
Lieut. Robert J. Lawler to duty with Garde de Haiti, Port au Prince, Haiti.
Lieut. Henry T. Cox resigned, effective, February 18.
Lieut. Thomas J. Carter to the navy station, Cavite, P. I.
Lieut. Comdr. Oscar Davis to the navy hospital, New York.
Lieut. Charles Wheatley to receiving barracks, Hampton Roads, Va.
Lieut. Ernest F. Slater to officer in charge of navy recruiting station, Brooklyn.
Lieut. David J. Cracovaner to the naval station, St. Thomas, V. I.
Comdr. Henry L. Dollard from the U. S. S. *Pennsylvania* to the U. S. S. *Oklahoma*, about June 1.
Comdr. Harry A. Garrison from the U. S. S. *Arizona* to the U. S. S. *Nevada*.
Lieut. Bruce V. Leamer from the Virgin Islands to the Navy Hospital, New York.
Comdr. Robert F. Jones from the hospital at Norfolk, Va., to the Asiatic Station.
Lieut. Jay F. Miller from the Navy Hospital, Washington, to Guam.
Lieut. Rufus A. Schneiders from Guam to Great Lakes, Ill., about June 10.
Lieut. Fred M. Rohow from the Naval Hospital, Norfolk, Va., to the Asiatic Station.
Comdr. William Chambers from the U. S. S. *Lexington* to the bureau of medicine and surgery, Washington, D. C.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 9, 1929.

A Voluntary Hospital at Edinburgh for Nervous Disorders

A voluntary hospital for the treatment of patients suffering from "nerves" has been established by the managers of the Royal Edinburgh Hospital at Morningside Park (the great Scottish hospital for nervous and mental disorders). The clinic will help the educational authorities in the solution of many problems connected with the precocious and the difficult, as well as with the backward, child. It is hoped the judicial authorities will avail themselves of the psychologic information it can supply in the case of delinquents, especially those of the juvenile class in their first lapse. The organization envisaged for the clinic is extensive. There will be a central and comprehensive department for psychiatry, or the healing of the mind, of which Dr. W. M. M'Alister, the lecturer on this subject in the university, will be the senior member. Connected with this department will be that for mental deficiency, of which Dr. R. D. Clarkson, university lecturer on the subject, will be the senior physician. There will be a special department for neurology, of which Dr. A. Ninian Bruce, also lecturer on the subject, will be in charge. There will be a psychologic department, which will be a handmaiden to all the other departments. A conspicuous feature of its activity will be its research work. Dr. Drevor, the reader in psychology, will be the director of this department. There will be a child guidance clinic, perhaps the most promising department of all, in the management of which the hospital and its pediatricians, Dr. C. M'Neil and Dr. T. Y. Finlay, will have the assistance of Miss Margaret Drummond, whose insight into the child mind, as displayed in her writings, is the admiration of all psychologists. There will also be a social service department.

The Medical Training of South African Natives

A report of a committee appointed by the native affairs department of the South African Union to inquire into the question of the medical training of natives has appeared. The committee examined sixty-six witnesses in all four provinces. These were extremely representative, including officials of the native affairs and other departments, university teachers, district surgeons, and other medical practitioners (of whom two, Drs. Moroko and Molema, were natives), medical missionaries, and a number of representative natives of various classes, ranging from Rev. Dr. Rubusana and Professor Jabavu to the ordinary headmen. The committee sat at East London, Kingwilliamstown, Lovedale, Bloemfontein, Durban and Johannesburg. The point is emphasized that the vast majority of natives in the Union have no opportunity of securing medical treatment, or, at least, medical treatment approaching efficiency. To provide all sections of the population, including native and colored, with adequate treatment, as well as to give attention to public health needs, about 1,000 additional physicians would be required. The committee recommends the establishment of a government native medical service to consist of three grades—medical practitioners, nurse-midwives and "health assistants." The latter would act as detectors of nuisances and reporters of diseases, first-aid administrants and active health propagandists. The medical practitioner would require hospital accommodation available at the center where he resides, and would supervise the health assistants and nurse-midwives, who would be stationed at convenient places in his district. Wherever possible, existing mission medical machinery should be incorporated in the scheme. The personnel of the service might be either European or native, but, in the case of medical officers, would for some time have to be mainly the former. However, the committee sees many reasons why the staff should be mainly or wholly native whenever a sufficient number of native practitioners have been trained. It thinks that the service should be full time, and that there should be regular inspection by senior officials. It suggests as salaries $2,500, rising by $250 to $3,750, for medical officers; $750, rising by $50 to $1,500, for health assistants, and $600, rising by $30 to $900, for nurse-midwives. The committee strongly endorses the idea of making full provision for the training of native medical practitioners. After considering the arguments put forward for instituting a sort of lower grade medical diploma, given after an abridged curriculum, as is done in French Equatorial Africa, it pronounces against such a scheme, and maintains that the only sound policy is to call on the Native to acquire exactly the same qualifications as the European. The committee recommends that the first annus medicus be taken at Fort Hare and the remaining five years at the University of the Witwatersrand, in parallel classes held in separate buildings. The Cape Town University, while willing to undertake the training for the first three years, on the same lines, pointed out that lack of clinical facilities precluded its doing so for the whole curriculum. Neither university made the slightest objection to admitting native students, but both realize that the present state of opinion demands separate classes.

Vital Statistics in 1928

The return of the registrar-general for 1928 has just been published. The birth rate for the year was 16.7 and the death rate, 11.7, while the infant mortality rate was 69. The birth rate is slightly higher than that of 1927, the death rate slightly lower, while the infant death rate is the lowest on record. These low death rates are due in some measure to the fact that influenza was not prevalent during the early months of the year. The following table shows the rate since 1921:

Rates per Thousand of Population

	1922	1923	1924	1925	1926	1927	1928
Birth rates.....	20.4	19.7	18.8	18.3	17.8	16.6	16.7
Death rates.....	12.8	11.6	12.2	12.2	11.6	12.3	11.7

It will be seen that the birth rates for 1927 and 1928 approximate closely, whereas in the preceding years the rate was falling steadily. In 1928 there were 660,267 births, 460,440 deaths and 302,810 marriages. The natural increase of the population by births over deaths was therefore 199,827. The estimated population of England and Wales has increased from 38,403,000 persons in 1922 to 39,482,000 (provisional figure) in 1928.

Silicosis in Sandstone Workers

The home office and the mines department have cooperated in an inquiry into silicosis in sandstone workers which was made by Dr. C. L. Sutherland and Dr. S. Bryson, two experts on silicosis. They have published an important report. Clinical examinations were made by both physicians of 454 men; 266 radiologic examinations were carried out at the nearest center possible, and 140 samples of atmosphere dust were taken for testing. Radiography revealed fibrosis, probably silicotic, in masons, stone-dressers, quarrymen, rock-getters and planers, and severe clinical fibrosis was found among the older masons, stone-dressers and quarrymen. Drillers who had been long at work showed fibrosis, but quarry laborers, cranemen, and sawyers seemed to be healthy. The progress of the disease was divided into three stages. In the first nodular shadows and an increase of hilum shadow, of linear shadows and of pulmonary reticulum were found. In the second stage there was an

increase in the area of nodular shadows with a tendency to confluence of the nodules; and symptoms, with some incapacity for work, were present. In the third stage there was total incapacity. The symptom most often complained of was dyspnea; some of the men had coughs and a few had had hemoptysis. Fully half of them, however, had no complaints. As the inquiry was limited to men actually at work the incidence of tuberculosis, which rapidly incapacitates, could not be estimated.

Clinical and roentgen examination suggested this disease in several cases. It was found possible to diagnose fibrosis of the lungs clinically at an earlier stage than radiologically. Investigations into the dust content of the atmosphere led to the conclusion that the action of wind in diluting and removing dust was most important. But workers in a shed cannot always stand to windward of their own and their neighbor's work. Wetting the surface helps the "getter" but does not greatly affect the fine dust produced by a cutting tool. To be effective water must be applied directly and in considerable quantity. Steam effectually lays dust produced in drilling. Respirators were used in some districts, but were very inefficient, and the men would not always wear them. This report gives some measure of the occupational risk to which masons are exposed, especially when working a closely grained sandstone with its secondary silica; 112 out of the 454 men examined were affected, or about one in every four.

Moynihan a Peer

The signal honor of a peerage has been conferred on Sir Berkeley Moynihan. This is the first occasion in which the honor has been conferred on a practicing surgeon and Moynihan is the second surgeon to receive it, the first being the late Lord Lister. To his merits as a great surgeon he unites a gift of lucid exposition and oratory unapproached in the profession. His contributions to debates in the house of lords, particularly on medical questions, should therefore be most valuable.

Plague Bacilli in Bombs?

Speaking at a dinner of the Author's Club, Sir Berkeley Moynihan, president of the Royal College of Surgeons, said: "We heard in 1916 that the Germans were going to use plague as a lethal weapon. We actually recovered plague bacilli from bombs dropped over the Fifth Army." In reply to this the German ambassador has written to the *Times* that he is authorized to state that this allegation is without the slightest foundation. Both the former commander of the "Flugzeugmeisterei," who was in charge of the technical side of the German air force and specially of the throwing of bombs, and the former chief of the medical department of the air force have definitely stated that bombs thrown by the German air force have never carried plague bacilli of any kind and that no attempt has ever been made to spread plague in this way.

In reply to the German ambassador, Sir Berkeley Moynihan quotes in the *Times* from the "Official History of the War," volume 2, Medical Services, pages 458 and 460: "On the Western front in 1916 it was rumored that the Germans might use plague as an offensive weapon against the allied armies, but this was considered highly improbable. In view of the rumor, however, the A. D. M. S. (Sanitation) in France advised the director-general that all sick or dead rats whose condition was not due to the measures taken for their destruction should be sent to a laboratory for examination. In January, 1918, the D. M. S. of the Fifth Army reported that the mobile laboratory in his area had examined some material dropped by an enemy balloon and that bacilli resembling *Bacillus pestis* had been isolated. Increased attention was therefore paid to the destruction of rats and the notification of any disease found among captured rats."

PARIS

(From Our Regular Correspondent)

Feb. 27, 1929.

A Grave Judicial Decision Affecting Cosmetic Surgery

The tribunal de Paris has rendered a decision in a damage suit brought against Dr. Dujarrier, surgeon to the Boucicaut Hospital and one of the best known surgeons of Paris, by a woman that he had operated on. The decision, which imposes about $8,000 damages on the surgeon, is couched in terms that have produced something of a sensation among the medical profession and even among the general public. The young woman, who was engaged to be married, thought her legs were too large and gave her an awkward appearance, in view of the present short style of dress. She had observed a certain coolness in the manner of her fiancé, which caused her marriage to be postponed, and was convinced that this must be due to the ugly appearance of her legs. She therefore sought out Dr. Dujarrier and begged him to reduce their size by a cutaneous resection. When the surgeon refused, she drew a revolver and threatened to kill herself if the operation was not performed and she should fail to marry. Dr. Dujarrier took pity on her and decided to perform the operation desired, which he considered devoid of danger, and, as the woman was of limited means, he operated on her free of charge in the hospital on the staff of which he serves. But things went wrong. Her skin lacked suppleness, and, when lifted, it contracted to such an extent as to render suturing difficult. The circulation in the limb became seriously impaired by excessive constriction, with the result that gangrene set in. It became necessary to amputate the foot and then the leg. The general condition of the patient became constantly worse, was associated with a high fever, and became so grave that her life seemed threatened, so that a bedside wedding in the hospital was decided on and carried out. The patient, however, finally recovered.

Immediately, the newly married couple filed a damage suit against the surgeon for the sum of $8,000, and won the case. A peculiarly interesting fact is that the judicial decision stated that the defendant had operated with great skill and from disinterested motives, and that he could be charged with no professional technical error. But, the judge stated, he had made the serious mistake of offering to perform an operation which was not necessary to save the patient's life and which involved risks of greater moment than the circumstances by reason of which the operation was requested. The very skill of the surgeon goes to prove the nature of the risks involved. The threat of suicide on the part of the patient could not be admitted as sufficient justification for his conduct. It proved simply that the patient was in a nervous pathologic condition, and it was the duty of the surgeon to refuse her request and to send her to a psychiatrist. The decision has created considerable stir, owing to the fact that it condemns, by implication, all surgical operations that are not absolutely necessary to save a human life, and, particularly, operations that are requested solely from motives of cosmetic interest. This conception is not new among French judges, and there have been several severe sentences imposed on radiologists who had caused burns about the face in attempting to remove in women superfluous hair growth by application of roentgen rays. It has reached the point that no radiologist will now consent to apply such treatment. The surgeons are protesting against this decision, and declare that esthetic, or cosmetic, surgery is perfectly legitimate, and that its sole object is not to cater to feminine vanity, or coquetry. Many persons of both sexes, afflicted with deformities of the nose, the face, sebaceous cysts of the face, or extensive angiomas, are unable, by reason of these facts, either to marry or to find employment in business offices or stores where they come in contact with the public. Further-

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more, cosmetic surgery has rendered untold services to war victims who suffered mutilations of the face. The result of this decision prohibiting such forms of surgery in France will be that persons desiring such operations will go to England or Germany.

The Electric Knife

The use in surgery of the electric knife, by reason of the fact that it accomplishes, at the same time, electrocoagulation, is winning more and more advocates. It suppresses all hemorrhage during the operation, except from the large arteries. In reality, this invention is of French origin, having been used by Doyen as much as twenty years ago. But he employed currents of high frequency and of high voltage. The new instruments utilize a much lower voltage, thus reducing the faradic effects to a minimum. Some instruments still produce shocks that are disturbing to the operator, but in the newer instruments this defect has been overcome, to a great extent. Several members have recommended the advantages of the method before the Société de chirurgie. M. Heitz-Boyer performed a nephrolithotomy entirely with the electric knife, without finding it necessary to place any catgut sutures; he placed merely a few silkworm-catgut sutures next to the drains. M. Gernez performed likewise an amputation of the tongue, applying only a supporting ligature to the lingual artery. M. Proust removed a breast, but a phlebitis of the axillary vein ensued. M. de Fourmestraux has removed, during the past four years, numerous epitheliomas of the face. He has treated likewise cancers of the cervix uteri before performing hysterectomy, eliminating in this manner the causes of the original vaginal infection.

The Use of Masks in Hospitals During the Influenza Epidemic

M. Marchoux, professor at the Institut Pasteur, known for his work on yellow fever in Brazil and on leprosy, took a strong stand recently, before the Academy of Medicine, for the wearing of masks by the medical personnel charged with the care of patients with influenza, a practice that was in vogue among the physicians of the middle ages. He reported the observations of Dr. Brunet, chief physician of the navy hospital at Brest, whom he succeeded in inducing to give the method a thorough trial. During the recent epidemic of influenza, which brought 600 patients to the hospital, the physicians, the nurses and the patients themselves wore a mask moistened with gomenol oil. Not a single case of hospital contagion was noted.

Automobile Accidents

The increasing number of accidents caused by automobiles in the streets and along the highways is beginning to awaken grave anxiety among the public authorities. In 1925, the number of such deaths for the year, in France, amounted to 2,373. In Paris and its environs, there were, in 1928, 519 deaths, and the number of injured reached almost 5,000. In 43 per cent of the cases, the accident is due to the imprudence of the victims, and in 53 per cent when pedestrians are involved. The deaths are distributed as follows: pedestrians, 68 per cent; cyclists, 14 per cent; drivers of vehicles, 18 per cent. The medical societies are studying the question of requiring drivers of automobiles to submit to an examination as to their fitness before they are given a license to drive. The Société de médecine of Nancy discussed the subject under five different heads, on the basis of papers presented by Dr. Morin, Professor Jeandelize, Professor Jacques, Professor Etienne and Dr. Aubry, respectively. They drew up a list of the diseases, or defects, which should debar a person from receiving a driver's license, or which should cause his license to be canceled in connection with the periodic reexaminations that should be imposed: aortic disorders, myocarditis, high blood pressure, marked plethora, nervous attacks, epilepsy, hypersomnia, mental diseases, toxicomanias, motor incoordination, spasmodic states, paralytic conditions, unilateral deafness, labyrinthine vertigo, auditive acuity inferior to 5 meters for the spoken voice; visual acuity is fixed at 0.3 for one eye and at 0.1 for the other; correction by means of glasses is admissible; persons with but one eye should be debarred; a visual acuity of 0.7 for one eye, without correction, may be accepted. Diplopia and hemeralopia are sufficient cause for rejection.

Deaths

Dr. Talamon has died in Paris, at the age of 78. Physician to the hospitals, he spent his whole career in the Bichat and the Tenon hospitals. He was an excellent clinician and a skilful bacteriologist. He was the first to discover the pneumococcus, the study of which was taken up later by Fraenkel. His work in appendicitis ("*vase clos*" theory) is well known. He was one of the founders of the *Presse médicale*, and his death brings to five out of eight the number of recent deaths among the members of the staff of this journal.

The death of Dr. Truc, also, professor at the Faculté de médecine of Montpellier, at the age of 72, has been announced. He was one of the most eminent French ophthalmologists.

Likewise, the death of Dr. Boulommié, at the age of 83, has occurred. He was a retired army physician. He had specialized in the study of arthritis and renal lithiasis, on which subjects he had published several works. For many years, he was consultant at the Vittel bath resort, and chief physician at the hospital of that city. He was the founder and had remained the president of the Union des femmes de France, which is one of the three branches of the French Red Cross societies.

BELGIUM

(From Our Regular Correspondent)

Feb. 5, 1929.

Organization of the Penitentiary Anthropologic Service

In a paper presented recently before the Société de médecine mentale of Belgium, M. Vervaeck discussed the medical and psychiatric aspects of prisons. He outlined the organization of the penitentiary anthropologic service, of which a brief account is given here.

In nine large prisons of the country, branches of the penitentiary anthropologic service have been established, directed by an alienist, who is charged with the systematic examination of prisoners when admitted to the institution. The examination is very complete and very detailed. Instructions in regard to penitentiary treatment (therapeutics, placement, education, industrial allotment and the like) are based by the examiner on the results of his observations. The physician supervises the execution of his instructions; treats subjects with neurologic and mental disorders, and, when the time comes for the dismissal of the prisoner, gives his opinion on the chances of regeneration and social readaptation.

The following medical organizations have been effected in recent years: (1) a prison for epileptic inmates at Merxplas, which has accommodations for thirty patients; (2) a section for abnormal subjects, dangerous and hard to manage, at the Central prison in Ghent, which now receives 150 prisoners annually, as compared with an average of thirty-seven up to 1919; (3) a prison and sanatorium combined, for the tuberculous, at Merxplas, with seventy-five admissions a year; (4) a treatment ward at the Forest prison (for tuberculous subjects), reserved for accused persons and prisoners with short sentences; (5) surgical services, including a complete and modern service at the Central prison in Ghent, and a similar service in the prison at Saint-Gilles; (6) a general infirmary in all the prisons; (7) a therapeutic ward for venereal patients, in the Forest prison; (8) weekly consultations by specialists (ophthalmologists, laryngologists, stomatologists), and (9) prison schools in Ghent and in Merxplas, for delinquents aged from 16 to 21.

The clinical observations made in these services are very interesting. Psychiatric examination and observation have revealed a large number of abnormal persons among the prison population. Scarcely a third of the delinquents are normal; 10 per cent are highly abnormal; from 20 to 40 per cent are weaklings or psychopaths; the creation of psychiatric annexes has rendered very important service; the number of patients that they receive continues to increase. The Forest annex was built entirely by inmates of the penitentiary on the site of the former *quartier de répression*. Since its creation, the number of cases of wilful and rebellious conduct have steadily decreased, which goes to show that the prisoners who by their misconduct made the task of the personnel extremely difficult were abnormal or actually ill and were therefore best cared for in the annex. It will be seen from this account that a new spirit has pervaded the prisons, which tends to give their various organizations a medical and therapeutic character.

Supervision of the Foreign Element at Seraing

Dr. Howard, who is connected with the communal health service at Seraing, a large mining and manufacturing center of Belgium, gave recently an account of a special service that has charge of the medical supervision of strangers and foreigners. The purpose of this service is the prophylaxis and the detection of infectious diseases. This supervision includes: (1) control of lodging houses, and (2) medical examination of strangers and foreigners.

CONTROL OF LODGING HOUSES

There are two classes of lodging houses that are subject to control: (1) houses kept by Belgians and patronized chiefly by Belgians, and (2) houses kept by foreigners and patronized chiefly by foreigners, generally compatriots. The latter are the more difficult to supervise. The health service ascertains the cubic contents of all rooms, and determines on that basis the maximum number of lodgers that may occupy the room. The number is expressly stated on a card conspicuously posted on the wall of each room. At the entrance of every house there is a placard showing the total capacity of the house. A copy of the placard is on file at the office of the health service. In addition to these hygienic measures, various rules in regard to the cleanliness of lodging houses are strictly enforced.

MEDICAL EXAMINATION OF FOREIGNERS AND TRANSIENTS

All strangers and foreigners locating in the commune and all who desire to change their lodging in the commune are required to present themselves at the town hall for a medical examination, bringing identification card if Belgian citizens and their passport if foreigners.

Search is made for venereal disease, tuberculosis, and the like, and those with venereal disease are directed to the antivenereal dispensary for regular treatment. If they refuse treatment, they are expelled from the commune and, if foreigners, they may be deported. If they are found to be tuberculous, they are directed to the antituberculosis dispensary.

The observations of the examination are recorded. The results of the system employed in Seraing are excellent, especially as regards venereal disease brought in by immigrants from northern Africa. All newcomers in Seraing, whether Belgian citizens or foreigners, are vaccinated against smallpox.

The New Gastro-Enterologic Society

A new medical society of purely scientific character, the Société belge de gastro-entérologie, has recently been founded in Brussels. At the first meeting, the charter members of the society adopted a constitution, examined the applications of Belgian and foreign candidates for membership, and chose the executive committee. Professors Duval and Beclere of Paris were invited to the inaugural session.

Should Bequests to Learned Societies Be Exempt from Taxation?

The federation of scientific societies of Belgium has passed a resolution demanding that bequests and gifts to learned societies shall be exempt from taxation. The resolution follows:

WHEREAS, Learned societies pursue a lofty purpose and are non profit taking organizations;

WHEREAS, They labor under financial difficulties which compel them to solicit aid from the public; and

WHEREAS, The high taxes imposed at present on legacies and gifts to the learned societies discourage patrons of science; therefore, be it

Resolved, That parliament should remove all taxes from legacies and gifts to learned societies.

The Royal Academy of Medicine has rallied to the support of the resolution.

Trachoma

In a recent address before the Société belge d'ophtalmologie, Dr. Van Duyse gave an account of the present status of trachoma in Belgium. Since the war, trachoma has been more prevalent in many countries. The speaker based his statements on the results of an inquiry made of ophthalmologists and on statistics concerning a great many patients. He stated that the favorable situation before the war had been maintained and that the geographic distribution of the disease had remained unchanged. The foreign labor element is responsible for very few cases of contamination. The speaker attributed the control of trachoma to the progress of hygiene and to the improved economic conditions existing among the laboring classes.

RIO DE JANEIRO

(From Our Regular Correspondent)

Feb. 15, 1929.

Antidysenteric Vaccine

Dr. Eduardo Vaz read a paper some time ago in which he claimed that he had obtained perfect results with antidysenteric vaccine as an immunizing agent when it was given by mouth. In his second paper he relates his attempts to make the vaccine more active, and describes his experiments on shortening the time necessary to prepare it in large quantities. Dr. Vaz did not succeed in substituting the original medium for a more economical one or in reducing the time of culture, without altering the immunizing value. He established several important circumstances, however, in the technic of the preparation. He had more success with the vaccine in broth than in peptonated water, and with the vaccine made from a bacterial culture of three weeks than with that whose cultures were of less time (two, four, seven, ten and fourteen days). The preparations in the least dilutions (experiments with 50, 200, 1,000 and 2,000 cc.) were most active as were those prepared in aerobic mediums over those which had more surface exposed. All these conditions aid in the development of the germs and consequently in the greater production of immunogenic substances.

Photodynamic Effect of Eosin on Protozoa and Metazoa

Drs. S. Pesôa and S. Pereira, in studying the photodynamic effect of eosin on different live organisms, arrived at the following conclusion: To exert a lethal effect the direct contact of the eosin solution with the micro-organism under observation is necessary; for this reason the micro-organism that is immersed in water and exposed to the light after having been filtered through a solution of eosin remains alive. The lethal effect of light-eosin was observed on several metazoa: tadpoles, worms and the larvae of worms which are parasites of the human being. All of them suffered the same effect and died after varying periods. The results on mosquito larvae were contradictory. The authors will present further data on this subject in a future report. They suggest the possibility

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of applying this technic in the prevention of schistosomiasis, assuming that, as the lethal effect of light-eosin on the larvae of strongyloides is marked, it will probably affect the cercarias of *Schistosoma* in the same way.

Calcification of the Arterial Wall

Dr. Paulo Tibiricá read two papers before the Society of Biology of São Paulo which dealt with two rare cases of calcification of the arterial wall and to sclerosis of the intima in a branch of the coronary artery of the ox. In the first paper he described two cases of calcification of the arterial wall of the type which Monckeberg has described, one of the arterial arteries and the other in the arteries of the thyroid gland. In the thyroid gland there was calcification of the elastic coat also, which probably was an independent process. In the second paper the author says that in studying sections of bovine myocardium he found a thickening of the intima, caused by proliferations, with fat deposits inside the endothelial cells, and derangement of the elastic coat.

NETHERLANDS

(From Our Regular Correspondent)

Jan. 25, 1929.

International Congress of Physical Education

The Netherlands medical society for physical development created a Netherlands chapter of the Comité international d'éducation physique et sportif, which organized at Amsterdam an international congress of physical education and sports. The congress was held at the time of the Olympic games, and was attended by 200 foreigners and fifty Netherlanders.

THE CARDIAC RHYTHM IN RELATION TO SPORT

The first topic on the program was "The Cardiac Rhythm in Relation to Sport." Dr. Merklen of Nancy found at the beginning of exercise such a rapid acceleration of the cardiac rhythm that it was impossible to attribute it to the influence of humoral factors or peripheral reflexes. He holds that there must be a relation between the psychic and motor centers of the cortex and the extracardiac centers. This assumption is supported by the fact that the mere thought of a movement is provocative of corresponding modifications. Permanent acceleration of the pulse appears to be due to a modification of the internal milieu. The acceleration varies in different persons, and the arterial pressure is an expression of the energy expended rather than of the intensity of the work performed.

UNIFORMITY IN RESEARCHES ON APTITUDE FOR PARTICIPATION IN SPORT ACTIVITIES

The second topic dealt with "Uniformity in Researches on Aptitude for Participation in Sport Activities." It was found impossible to establish a model formula at once, for each author treated the question from a different point of view. It was decided to appoint an international committee charged with the duty of finding a solution of the problem.

PHYSICAL EDUCATION IN THE SCHOOLS

The third topic took up the importance of physical education in the primary, middle and higher schools for both sexes.

During the course of the Olympic games at Amsterdam, 300 athletes were examined, before and after their performances, by more than thirty-seven physicians and physiologists, with the aid of instruments of the most accurate type that modern physiology can furnish. Dr. Heisz of Berlin, by means of radiophotography, was able to detect certain malformations of the joints. With the effective cooperation of the civil and university authorities and the courtesy of the patients, it was possible to make, in a short time, 480 articular examinations, 100 photographs of the pelvis, and 250 measurements of the thorax, in a standing and in a reclining posture. With the aid of the Einthoven galvanometer, Dr. Hoogerverf prepared 240 electrocardiograms controlled by the clinical researches of Dr. Bramweel. The examinations on arterial pressure were performed by Professor Buerger and on cardiac frequency by Merklen. Laugier carried out ergographic researches. Tessar of Paris studied action currents in fatigued muscles. Researches on alexin by Müller and Giessen, and the effect of insulin on the blood by Best of Toronto likewise yielded important results. These investigations contributed much toward the clarification of problems in metabolism and applied physiology. It would be well if the physiomedical installation at Amsterdam could be made permanent.

Congress and Exhibit on the Work and the Methods of Work of Infirm Persons

The congress and exhibit on the work and the methods of work of infirm persons were held in the colonial institute at Amsterdam. There were general and section meetings. In the general meetings, there were treated, in addition to the social significance of the work of the infirm, the question of aptitude for various types of work, the conditions of work, the special task of labor exchanges, and the duties of the employer and of the authorities. In the section meetings, the discussions had to do chiefly with medical, socio-economic and legislative questions.

The exhibit held in the city museum was divided into several sections, each section dealing with some problem discussed at the congress. A number of further questions were studied: the care to be given the blind and the deaf; education of deaf mutes; a library with special books for the blind; tuberculosis; heredity and marriages between relatives; the mendelian laws; syphilis as the cause of infirmities; industrial accidents, and the like.

In his paper, Dr. D. Brocx emphasized the difficulty of giving an exact definition of what constitutes "infirmities." That may seem strange to any one who takes only the economic view and who is inclined to declare only those not "fit" who, by reason of their infirmities, are unable to provide for their own existence. But, in general, it is not permissible to regard as "fit" a blind person, for example, though he has been able to secure for himself a position that enables him to provide for his needs.

All the speakers were agreed that less importance should be attached to "pity and aid of the poor" and more importance to the need of making every infirm person, whatever may be his infirmity, capable of producing, in some definite line of work, something that will support him and will be profitable to society in general.

When infirm persons reach the point that they are self-supporting, their whole conception of themselves is raised, they live on a higher plane and cease to be stumbling blocks in the solution of economic problems. If an infirm person succeeds in making himself the equal, in any branch of work, of a sound person, he should be placed on the same footing as the latter. It would be unjust and dangerous to compromise the salary of a sound and healthy workman by alleging to be able to produce more cheaply by taking advantage of the labor of infirm persons. On the other hand, the infirm person must be employed in work for which he is suited and, in the main, by himself, for, while that may appear severe, an infirm person working in a crew would not be tolerated if the other workmen had to help him do his work.

A great many difficulties would be avoided if one could assign to an infirm person the work for which he is best fitted. Supervising councils should not be content with declaring infirm persons who present themselves as merely "fit" or "unfit" but should assume the duty of discovering in what branch of industry they would be likely to succeed and just what place should be given them. A bureau of supervision should be created, in which physicians, technicians and psychotechnicians

should work hand in hand in order to determine the capacities of infirm workers.

Cholera in Batavia (Java), in October, 1927

Dr. De Vogel has published, through the International Bureau of Health, an interesting study based on the official documents pertaining to the epidemic of cholera that menaced the Dutch East Indies, in October, 1927. The measures adopted brought about a rapid retrogression of the disease, for which reason it is interesting to note what they were, for the onset of the epidemic resembled closely that of destructive epidemics of former times. It is certain that the immunization through anticholera vaccination, to which the whole population was promptly subjected, played an important rôle, for the afternoon of the day on which the first case was discovered, from 400 to 500 persons residing in the vicinity of the house in which the disease was discovered were vaccinated. By the end of ten days, 20,400 persons had been vaccinated, or almost the whole population of the port, and, within two months, five sevenths of the entire population had been subjected to vaccination. It was found that, in a well organized station, a physician could vaccinate eight persons a minute, 500 persons an hour and an average of from 2,000 to 2,500 persons a day.

The New Periodical Zonnestraal

The publication of a new periodical, the *Zonnestraal*, has been begun. It is the organ of the Netherlands society of the same name, the object of which is to establish working colonies for the tuberculous in the Netherlands. The editorial department is in charge of Jan van Zutphem, president of the society. The periodical will devote itself to the crusade against tuberculosis in general, and, more particularly, to tuberculosis in workmen. The social aspects of the problem, and, especially, the housing situation, factory hygiene, and the like, will be considered. Special columns will be devoted to technic, to the arts and sciences, literature, and dramatic and musical art.

ITALY

(From Our Regular Correspondent)

Jan. 30, 1929.

Reorganization of the Sanitary Service of Rome

On the recommendation of the sanitary commission, the governor of Rome has recently decided to reorganize the service of sanitary aid in the suburbs of Rome and in the Agro Romano, the countryside about Rome. The contemplated changes concern, above all, aid for the poor and the organization of an emergency service. The six urban-suburban health officers that now exist are to be replaced by eleven to be located in the outlying districts of the city. These will be in addition to the seventeen existing officers. The sanitary service of Lido di Ostia will likewise be provided for. In every group of houses and in every labor center, placards will be affixed announcing the sanitary center to which an appeal for medical assistance should be made.

The Councils on Public Instruction and Research

The following professors have been appointed to serve on the new superior council of public instruction, as representatives of the medicosurgical faculty: Pascale, clinical surgeon of Naples; Leotta, clinical surgeon of Bari; Morelli, director of the tuberculosis clinic at Rome, and Simonetta.

Appointments on the national council of research are as follows: president of the biologic committee, Prof. Filippo Bottazzi, and president of the medical committee, Prof. Ettore Marchiafava, senator.

The Microbiologic Society

The administrative council of the Italian section of the International Society of Microbiology met recently for the first time at Milan. Professor Belfanti was elected as the active president, and it was decided to offer the honorary presidency of the section to Profs. Aldo Castellani and Alessandro Lustig. Next May, a convention will be held in Perugia to coordinate the contributions of the Italian microbiologists to the next international congress, which will be held in Paris.

The Hygienic Services of Milan

In the annual budget for 1928, the commune of Milan appropriated a considerable sum for the improvement of several hygienic services. Eleven million lire are to be used to improve the sewerage system and 4,350,000 lire for the further development of the water system. One million lire will be devoted to the construction of new public baths and swimming pools, and for the cemetery service a million more lire will be expended than in 1928. The total appropriations for the year 1929 for hygiene and for keeping the city clean exceed 100,000,000 lire ($5,263,100).

Prophylaxis Against Rabies

A recent bulletin issued by the general management of the Sanità Pubblica (public health service) contains instructions for the intensification of the crusade against rabies by means of the application of veterinary hygiene. The statistics on the number of persons subjected to antirabic treatment in the various institutes of the country reveal a progressive diminution in the number of persons bitten. While, in the first six months of 1927, the total number bitten was 3,591, in the second six months of that year the number dropped to 2,996, and in the first six months of 1928, to 2,462. During this eighteen month period, there was therefore a diminution of 33 per cent in the number of cases.

The Congress of Tropical Medicine

At the closing session of the International Congress of Tropical Medicine, held at Cairo, eighteen physicians were pronounced doctors honoris causa, among these two Italians, Prof. Aldo Castellani and Prof. Giovanni Grixoni, director of the Sanità militare at Bologna.

The Work of the Antituberculosis Society of Rome

During the year 1928, the Consorzio Antitubercolare di Roma (antituberculosis society) continued to carry on its work of antituberculosis propaganda and of rendering aid to the tuberculous. Two new dispensaries were built and completely equipped—one in Civitavecchia and the other in Velletri—both of which are in full operation. The annual "Flower Festival" was organized and was celebrated in all the 144 communes of the province of Rome. The society furnished also the funds for sending to the seashore 253 weakly and predisposed children and forty-one women in need of treatment. In addition, thirty-two children were sent to the colonies in the mountains. At present, the society is contemplating the acquisition of a parcel of land on which it is planning to erect a combined tuberculosis hospital and sanatorium for women. A tuberculosis preventorium will likewise be created in Gaeta.

Lectures by Professor Devoto at Trieste

Professor Devoto, director of the Clinica del lavoro of the University of Milan, recently gave two lectures at Trieste. In the first lecture, before the Associazione medica triestina, Devoto discussed the modern theories of nephritis, and pointed out that very often in such disorders the physician came too late, namely after a chronic condition had been established. Any one who has had slight attacks of nephritis should watch himself carefully in periods of apparent recovery, and should, if possible, spend some time in a warm, dry climate. In Italy, where there are many suitable localities, institutes for such treatment should be created with accommodations for every social class. Physicians should remember that the kidney is an organ that has special resources and can repair its defects if the lesions are not too extensive.

The second lecture, in the Biblioteca dell'Ospedale Regina Elena, dealt with the subject "New Bases of Social Medicine." The speaker discussed the laws of a social nature that had been recently enacted, especially the law pertaining to tuberculosis; that concerning mother and child; the provisions for treatment in the mountains and at the seashore, and others. Also the movement designated as the "Carta del lavoro" is designed to protect the health of workmen—of all who are in danger or whose health has been impaired by labor. For the application of the norms of social and national medicine, a large number of physicians will be needed, in spite of the fact that there is today much discussion of the limitation of enrolment in the faculties of medicine or of closing the register of physicians for a certain period. However, physicians must get away from the idea that they must locate in a large city, for the cities are overcrowded, and must adapt themselves to the life in the smaller towns and the rural communities.

BERLIN

(From Our Regular Correspondent)

Feb. 23, 1929.

Provisions for the Care of Deaf Mutes and Persons Hard of Hearing

The care of deaf mutes and persons hard of hearing has been further developed during recent years. In 1912, there were in Germany 12.3 deaf mutes per 10,000 inhabitants in the rural communes, 5.9 in the small cities, and 3.7 in the large cities. The condition is congenital in about 10 per cent of cases, especially in regions in which goiter and cretinism are prevalent. The distribution of deafmutism varies with the locality. The crusade against infectious diseases and the progress of medicine have brought about a distinct retrogression. In 1871, there were in Germany 9.7 deaf mutes per 10,000 population; in 1900, there were only 8.6, and in 1925, only 6.4. Those who are merely deaf have been included in the last mentioned figure.

The basis for the care of deaf mutes is the census of such persons; more particularly, during the earliest years. The list of deaf and dumb children of school age has been kept up to date in Germany since 1902. The health officers throughout the country inquire into every case that becomes known and make a report on a prescribed form. The education and training of the deaf and dumb children who are found worthy take place in the institutions for deaf mutes. There they acquire the necessary schooling and are prepared for some occupation. In 1923, there were seventy-eight such institutions in Germany. The institutions belong to the various German states or communes, or they are administered by societies or by church or lay organizations of various kinds. Their education, which is in the hands of a specially trained teaching personnel, comprises, above all, instruction in language, the endeavor being made to substitute, as far as possible, oral language for the sign language formerly employed. The industrial training is extensive. It is given by special teachers and artisans, who receive state awards for particularly good results from their instruction.

The federal law pertaining to the care of deaf mutes may be outlined as follows: There are certain fundamental provisions contained in the Bürgerliches Gesetzbuch, or civil codex, and in the Reichsversicherungsordnung, or federal insurance law, though the latter concerns only those carrying compulsory insurance and who, by reason of disease or industrial accident, have become deaf and dumb or hard of hearing. Since 1924, the care of needy persons is based on the federal decree concerning such matters, together with the expositions thereto issued by the federal ministries of the interior and of labor. These regulations contain also provisions for deaf mutes and persons hard of hearing. The care is an obligation of the *fürsorgeverbände* (leagues), which are legally organized public bodies. The federal law pertaining to juvenile welfare, enacted in 1922, made provision for the care of minors. Provisions for deaf and dumb children had been made much earlier by the various German states. In Prussia, there was enacted, in 1900, the Fürsorgeerziehungsgesetz, and, in 1911, the law pertaining to the education of deaf and dumb children. According to the last mentioned law, the communal league (*kommunalverband*) is under obligations to place in institutions for deaf mutes all deaf and dumb children of school age.

State care of deaf mutes is aided, to a great extent, by private charity or voluntary organizations. In addition to the private institutions for deaf mutes, there are about forty German societies that care for and aid in the industrial advancement of adult deaf mutes; for example, by securing them some form of occupation. The deaf mutes have a league of their own, the Reichsverband der Taubstummen, which publishes a journal for deaf mutes and aids needy members. The league of German teachers of deaf mutes (the Bund deutscher Taubstummenlehrer) holds regular meetings, and, with the aid of their special journal, *Blätter für Taubstummenbildung*, advances the cause of instruction of deaf mutes.

The care of persons who are hard of hearing is of more recent origin. No statistics have been taken as yet. No legal provisions for the education of children who are hard of hearing have been made either by the federal government or by the individual states. In general, the obligations in regard to school attendance are the same for children who are hard of hearing as for normal children; however, in Prussia, on the basis of the law of 1927 in regard to school attendance, certain exceptions are made. The society of teachers of the hard of hearing (Schwerhörigen-Lehrerverein) has demanded repeatedly that special legislation be enacted with regard to the schooling of children who are hard of hearing. Saxony has three and Hamburg one state school for pupils who are hard of hearing. The remaining German states have sixteen public institutions of this kind, with about 1,400 pupils. In 1927, there were in Germany twenty-three schools for pupils who are hard of hearing, and six *sprachheilschulen*, or schools for children with defective speech, in which an endeavor is made to remedy, through medical aid, existing speech defects. Furthermore, Berlin, Dresden and Hamburg have opened continuation schools for pupils who are hard of hearing. In these schools, the remnant of hearing is developed as far as possible, and, in supplementary aid of remaining audition, instruction is given in lip reading in accordance with the *hörschmethode*, a method that utilizes both audition and vision. These schools also provide instruction in manual training. In Berlin-Charlottenburg and in Hamburg, official bureaus of vocational guidance have been opened for persons hard of hearing. The correct choice of a vocation is of great importance for persons thus handicapped.

Mortality in Prussia in 1927

According to the recent report of the Prussian bureau of statistics, the total number of deaths occurring in Prussia in 1927 was 461,938, which establishes a mortality of 11.93 per thousand, as against 11.59 the previous year. Of the deaths, 272,130 occurred in the cities and 189,808 in the rural regions. The greater increase in mortality was found in the cities (from 11.99 up to 12.53)—in the rural districts, from 11.09 up to 11.16. The mortality rate of communicable diseases has increased, mainly as the result of an increase of 3,100 in the deaths from pneumonia and about 8,800 from influenza. An increased mortality was noted also in diseases of the respiratory organs, the circulatory organs, cancer and other neoplasms, fatal accidents, and urinary and venereal diseases. A decreased mortality was shown especially in diseases of the digestive organs and of the nervous system. The mortality from suicide (0.25), murder and homicide (0.02) and the diseases of childbed (aside from puerperal fever) remained unchanged. There was an increase of mortality in almost all government districts, but the greatest increase was in Berlin (7.5 per cent).

Marriages

RICHARD P. SHAPIRO to Miss Rose Marie Bank, both of Philadelphia, recently.

ETHAN FLAGG BUTLER, Sayre, Pa., to Mrs. Edith Halliday of Elmira, N. Y., March 2.

JAMES T. LACEY, JR., to Miss Violet Virginia Van Cleve, both of Philadelphia, March 7.

CLIFFORD C. KENNEDY, Norwood, Ohio, to Mrs. Rudolph Staud of Cincinnati, February 12.

LEWIS NEFF ASHWORTH to Mrs. Fern Kuqua Davenport, both of Connersville, Ind., Dec. 31, 1928.

WALTER PUTNAM BLOUNT, Oak Park, Ill., to Miss Frances Babbitt Hoben, of Kalamazoo, Mich., at London, England, February 26.

Deaths

Franklin E. Walbridge, Stevens Point, Wis.; University of Michigan Medical School, Ann Arbor, 1877; past president of the State Medical Society of Wisconsin; formerly on the staff of the River Pines Sanatorium, Stevens Point, and the Knowlton Hospital, now known as the Columbia Hospital, Milwaukee; aged 77; died, February 12, at Altadena, Calif., of heart disease.

Otto Glogau ✠ New York; University of Vienna, Austria, 1906; member of the American Academy of Ophthalmology and Oto-Laryngology; founded the American Convalescent Home for Vienna's Children; received from the Austrian Republic a medal for service to sick and poor children; aged 46; died, March 8, at his home in New Rochelle, of cerebral hemorrhage.

Frank Hamilton Mewburn, Edmonton, Alta., Canada; McGill University Faculty of Medicine, Montreal, Que., 1881; professor of surgery, University of Alberta Faculty of Medicine; served during the World War; formerly superintendent of the Winnipeg (Man.) General Hospital; aged 70; died, January 29, at the University Hospital, of pneumonia.

Archibald Robert B. Williamson, Kingston, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1899; M.R.C.S., England, and L.R.C.P., London; professor of obstetrics and secretary of the faculty at his alma mater; medical health officer of Kingston; aged 53; died, Dec. 24, 1928, of heart disease and nephritis.

Albert T. Lytle ✠ Buffalo; University of Buffalo School of Medicine, 1893; emeritus professor of medical economics at his alma mater; on the staffs of the Lafayette General and the Buffalo City hospitals; aged 68; died, February 24, of angina pectoris and arteriosclerosis.

James Monroe Fairly ✠ Orofino, Idaho; Medical Department of Columbian University, Washington, D. C., 1896; aged 59; died, March 9, at the Walter Reed General Hospital, Washington, D. C., of arteriosclerosis, chronic nephritis and hypostatic pneumonia.

David G. Snodgrass ✠ Meadville, Pa.; Starling Medical College, Columbus, Ohio, 1882; past president of the Crawford County Medical Society; on the staff of the Meadville City Hospital; aged 72; died, February 25, of endocarditis.

Frank S. Goodman, Washington, D. C.; College of Physicians and Surgeons, Baltimore, 1881; chief pharmacist of the United States Public Health Service; aged 68; died, February 22, of coronary thrombosis and arteriosclerosis.

Cecil Nimrod Reger, Baltimore; University of Louisville (Ky.) School of Medicine, 1909; served during the World War; aged 52; died, March 19, at the Church Home and Infirmary, of chronic nephritis and uremia.

Albert Warren Newhall, Barrow, Alaska; University of Vermont College of Medicine, Burlington, 1898; for many years a medical missionary in isolated villages of Alaska; aged 56; died, in March, of heart disease.

James Fulton Rumer ✠ Davison, Mich.; Kentucky School of Medicine, Louisville, 1887; for thirty years member of the school board and formerly state senator; aged 76; died, March 8, of meningitis following middle ear disease.

Hobart Henry Bissell, Watseka, Ill.; Hahnemann Medical College and Hospital, Chicago, 1899; member of the Illinois State Medical Society; aged 59; died, February 25, at San Antonio, Texas, of cerebral hemorrhage.

Albert Armstrong, Arnprior, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1867; formerly coroner, and member and chairman of the board of education; aged 81; died, Dec. 3, 1928, of acute endocarditis.

Lewis Brinton, Philadelphia; Jefferson Medical College of Philadelphia, 1882; formerly medical director of the American Hospital for Diseases of the Stomach; aged 67; died, March 13, of chronic myocarditis and nephritis.

Ernst Hermann Arnold ✠ New Haven, Conn.; Yale University School of Medicine, New Haven, 1894; on the staff of the Griffin Hospital, Derby, and the Grace Hospital; aged 64; died, March 9, of heart disease.

Howard Herman Quaife, Castlerock, Wash.; State University of Iowa College of Homeopathic Medicine, Iowa City, 1905; University of Illinois College of Medicine, 1910; aged 56; died, March 5, of pneumonia.

Francis V. Baldwin ✠ Forsyth, Mo.; Kansas City Medical College, 1882; president of the Taney County Medical Society; aged 72; died, February 10, in a hospital at Springfield, following an operation.

Louis Theodore Riesmeyer, St. Louis; Missouri Medical College, St. Louis, 1883; member of the Missouri State Medical Association; aged 71; died, February 15, of chronic myocarditis and arteriosclerosis.

Henry B. Landon, Monroe, Mich.; University of Michigan Medical School, Ann Arbor, 1865; member of the Michigan State Medical Society; Civil War veteran; aged 88; died, January 15, of pneumonia.

Edwin Ehlers Bond, Caldwell, N. J.; Bellevue Hospital Medical College, New York, 1892; formerly on the staff of the Mountainside Hospital, Montclair; aged 57; died, February 8, following a prostatectomy.

Jacob Greenspan ✠ Chicago; Jenner Medical College, Chicago, 1915; formerly on the staff of the Lincoln (Ill.) State School and Colony; aged 46; died, March 17, of pulmonary abscess and gastric ulcer.

Aaron Rood Ingram, Bee Ridge, Fla.; University of Michigan Medical School, Ann Arbor, 1877; formerly member of the board of education of Fenton, Mich.; aged 78; died, February 6, of heart disease.

Charles H. Bower, Council Bluffs, Iowa; Jefferson Medical College of Philadelphia, 1885; aged 75; died, Dec. 11, 1928, at Annadale, Staten Island, N. Y., of chronic nephritis, endocarditis and myocarditis.

William Ross Cluness, San Francisco; Medical Department University of California, 1887; aged 64; died, March 16, at St. Joseph's Hospital, of carcinoma of the stomach with metastasis to the liver.

Frank Harvey Coops ✠ Bridgeport, Conn.; College of Physicians and Surgeons, Baltimore, 1896; past president of the Fairfield County Medical Society; aged 63; died, February 19, of myocarditis.

William F. H. Osmun, San Francisco; Jefferson Medical College of Philadelphia, 1889; aged 62; died, January 29, at St. Francis Hospital, of chronic myocarditis, arteriosclerosis and bronchopneumonia.

Edwina Drake Frech Dusenbery, Florham Park, N. J.; New York Medical College and Hospital for Women, New York, 1906; aged 44; died, February 4, at Daytona Beach, Fla., of heart disease.

Milne Barker Swift, Tangerine, Fla.; Columbia University College of Physicians and Surgeons, New York, 1905; served during the World War; aged 49; died, March 2, of cerebral hemorrhage.

Richard Jefferson Owens, Mill Spring, Mo.; Medical Department University of Tennessee, Nashville, 1890; secretary of the Wayne County Medical Society; aged 77; died in February, of pneumonia.

Henry H. Stone, Phoenix, Ariz.; University of Buffalo School of Medicine, 1884; member of the Arizona State Medical Association; aged 64; died, February 10, of coronary disease and pneumonia.

Samuel Kelly Campbell ✠ Harlowton, Mont.; Medical Department of St. Louis University, 1905; for twenty years chairman of the school board; aged 48; died, in March, of acute cholecystitis.

Albert Yates, Washington, Mich.; Detroit Medical College, 1872; formerly bank president, justice of the peace, and

✠ Indicates "Fellow" of the American Medical Association.

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president of the school board; aged 86; died, February 26, of diabetes mellitus.

Ernest N. Neber, Carbondale, Ill.; St. Louis College of Physicians and Surgeons, 1909; member of the Illinois State Medical Society; aged 44; died, March 5, of pneumonia, following influenza.

Buford M. Henry, Alba, Mo.; University Medical College of Kansas City, Mo., 1892; member of the Missouri State Medical Association; aged 59; died suddenly, January 5, of heart disease.

Ralph A. McDougall, Duanesburg, N. Y.; Albany Medical College, 1885; for forty years health officer of Duanesburg; aged 74; died, February 13, at the Ellis Hospital, Schenectady, of influenza.

William D. Sharpe, Brampton, Ont., Canada; Western University, Faculty of Medicine, 1895; medical health officer of Brampton; aged 61; died, Dec. 22, 1928, of cerebral hemorrhage.

Otto L. Asher, Fergus Falls, Minn.; Keokuk Medical College, College of Physicians and Surgeons, 1908; on the staff of the state hospital; aged 57; died, Dec. 27, 1928, of cerebral hemorrhage.

Willis T. Davison, Canton, Pa.; Jefferson Medical College of Philadelphia, 1882; member of the Medical Society of the State of Pennsylvania; aged 70; died, Nov. 2, 1928, of cerebral hemorrhage.

John D. McRee, Yukon, Okla.; Medical Department University of Tennessee, Nashville, 1893; also a druggist; aged 69; was found dead in bed, February 3, of heart disease, following influenza.

Howard Sedgwick Smith, Sugargrove, Pa.; Jefferson Medical College of Philadelphia, 1903; served during the World War; aged 54; died, in February, of a self-inflicted bullet wound.

Chanley Jay Lukens, Oskaloosa, Iowa; Missouri Medical College, St. Louis, 1881; formerly member of the school board; aged 71; died, February 15, at the Mercy Hospital, of uremia.

Joseph Marshall Thompson, Brooklyn; Boston University School of Medicine, 1878; Hahnemann Medical College of Philadelphia, 1879; aged 72; died, March 13, of heart disease.

Hezekiah Martin Vaught, Greenville, Ill.; University of Louisville (Ky.) School of Medicine, 1882; aged 71; died, February 15, at Los Angeles, of uremia and diabetes mellitus.

Orlando S. Coffin, Mooresville, Ind.; Indiana Eclectic Medical College, Indianapolis, 1883; aged 71; died, March 9, at the Indiana Christian Hospital, Indianapolis, of meningitis.

Theodore G. Bieling, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1886; aged 64; died, Dec. 9, 1928, at St. Luke's Hospital, of chronic nephritis.

Joseph Edward Donnelly ✠ New York; Columbia University College of Physicians and Surgeons, New York, 1910; aged 46; died, February 26, of chronic myocarditis.

Walter Campbell McMurtry ✠ Virginia, Minn.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1905; aged 46; died, in December, 1928, of myocarditis.

Christopher Stephen Haynes, Athens, Ga.; Leonard Medical School, Raleigh, N. C., 1895; also a minister; aged 63; died in February, of acute dilatation of the heart.

David W. Stephens, Covington, Ky.; Medical College of Ohio, Cincinnati, 1904; for many years county coroner; aged 48; died, in February, of tonsillitis and laryngitis.

John Digby Wyatt, Minneapolis (licensed, Minnesota, years of practice); aged 83; died, February 12, of coronary thrombosis and myocarditis, following a herniotomy.

Oliver P. Fletcher, San Diego, Calif.; Physio-Medical Institute, Cincinnati, 1880; aged 83; died, January 15, of chronic myocarditis, hypertension and angina pectoris.

Alfred Murdock, Gulfport, Miss.; University of Nashville (Tenn.) Medical Department, 1876; aged 77; died, February 7, of lymphosarcoma and chronic myocarditis.

Thomas James Foster ✠ Detroit; Detroit College of Medicine, 1898; aged 56; died in February, at St. Petersburg, Fla., of cardiorenal disease, gallstones and goiter.

Harry James Robb, Plentywood, Mont.; Chicago College of Medicine and Surgery, 1913; aged 42; was electrocuted, in March, by his own roentgen-ray machine.

William Albert Goodrich ✠ Waterbury, Conn.; Medico-Chirurgical College of Philadelphia, 1902; aged 52; died, February 21, of a self-inflicted bullet wound.

Allen G. T. Northern, Dycusburg, Ky. (licensed, Kentucky, 1925); member of the Kentucky State Medical Association; aged 43; died, January 21, of paralysis.

William Scott Warder, Boulder, Colo.; Keokuk Medical College, College of Physicians and Surgeons, 1902; aged 52; died, February 17, of chronic nephritis.

Augustine J. O. McNorton, Swanton, Ohio; Meharry Medical College, Nashville, Tenn., 1916; aged 49; died, March 5, following an operation for appendicitis.

George F. Roessler, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1887; aged 67; died, January 9, of carcinoma of the liver.

James Furman Youmans, Wichita, Kan.; Bennett College of Eclectic Medicine and Surgery, 1878; aged 80; died, February 27, of cerebral hemorrhage.

Johnson Putnam Strouse, Garrett, Ind.; Medical Department of the University of Wooster, Cleveland, 1887; aged 64; died, in February, of pneumonia.

John L. Boyd, Muskegon, Mich.; Saginaw Valley Medical College, Saginaw, 1901; aged 57; died, March 2, at the Mercy Hospital, of lobar pneumonia.

William Ennis Kinnett, Peoria, Ill.; Eclectic Medical Institute, Cincinnati, 1876; aged 79; died, in February, of ruptured aneurysm of the aorta.

Raphael S. Berger ✠ New York; Fordham University School of Medicine, New York, 1921; aged 30; died, January 19, of chronic nephritis.

Mark A. Jerome ✠ Toledo, Ohio; Starling Medical College, Columbus, 1883; aged 71; was found dead in bed, February 28, of heart disease.

Edward E. Gaines, Puyallup, Wash.; Rush Medical College, Chicago, 1886; aged 66; died, February 5, of malignant papilloma of the bladder.

Edwin Burt Beckwith, Chicago; Hering Medical College, Chicago, 1908; aged 58; died in March, of cirrhosis of the liver and mitral stenosis.

H. B. Lesher, Fairfield, Iowa (licensed, Iowa, 1886); Civil War veteran; aged 88; died, March 6, at the Jefferson County Hospital, of pneumonia.

James David Creamer, Texarkana, Texas; Southern Medical College, Atlanta, 1893; aged 63; died, February 26, of pulmonary tuberculosis.

Raymond Sargent Wilder, New York; Harvard University Medical School, Boston, 1893; aged 62; died, February 20, of lymphatic leukemia.

Forest Clifford Nichols ✠ Wausau, Wis.; Rush Medical College, Chicago, 1894; aged 61; died, March 12, of myocarditis and chronic nephritis.

Edward John Emmert, Lawrenceburg, Ind.; Miami Medical College, Cincinnati, 1895; aged 57; died, February 3, of organic heart disease.

Thomas N. Marcellus, Hamilton, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1909; died, Nov. 27, 1928, at Georgetown.

Francis G. Daehne, Flatonia, Texas; University of Texas School of Medicine, Galveston, 1896; aged 65; died, March 8, of acute myocarditis.

David Albert Locke, Minneapolis; Hahnemann Medical College and Hospital, Chicago, 1884; aged 74; died, February 20, of heart disease.

Horace John Soule ✠ Winthrop, Mass.; Dartmouth Medical School, Hanover, N. H., 1885; aged 68; died, January 21, of lobar pneumonia.

Otto F. Claus, St. Louis; Marion-Sims College of Medicine, St. Louis, 1897; also a druggist; aged 64; died, February 22, of heart disease.

Willard C. Du Bois, Syracuse, N. Y.; Homeopathic Hospital College, Cleveland, 1890; aged 65; died, Nov. 25, 1928, of angina pectoris.

W. T. Scott, Montreal, Que., Canada; McGill University Faculty of Medicine, Montreal, 1897; aged 62; died, February 21, of septicemia.

Arthur W. Bloxsome, Pennville, Ind.; Medical Department University of Indianapolis, 1897; aged 57; died, March 9, of heart disease.

Henry A. Reichenbach, Casper, Wyo.; Medical Department Omaha University, 1901; aged 53; died, February 18, of pneumonia.

James M. Murphy, Silex, Ark. (licensed, Arkansas, 1903); aged 79; died, January 20, of diabetes mellitus.

Correspondence

THE THOMAS WRENCH

To the Editor:—The following letter was sent to me by Dr. John Ridlon, who presented me recently with the original model of the Hugh Owen Thomas wrench. Such a wrench should be owned by every surgeon whose practice includes fractures and deformities. Nothing as simple will aid so greatly in the reduction of the Colles fracture, or the replacement of the astragulus in Pott's fracture.

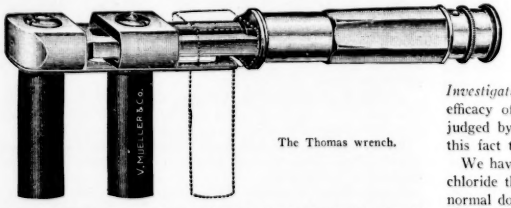
H. B. THOMAS, M.D., Chicago.

My dear Thomas:—

In handing you this wrench "the spirit moves me" to tell you its story; so that when you are as old as I am you can pass it on to some worthy successor.

When I entered the "surgery" of Hugh Owen Thomas at 11 Nelson Street, Liverpool, one November morning in 1887 (or 1888) I found him using a wrench of this type on a congenital clubfoot. I asked where I could get one. He said: "I modified this myself from a wrench I found in a hardware shop; but I have searched England and cannot find another."

When in Paris on my way to the tenth International Medical Congress at Berlin in 1890 while walking down the left hand side of the Avenue de L'Opera from the Place de l'Opera to the Rue Rivoli, I saw this very wrench in the window of a hardware shop. I went in and bought it for 17 francs, 50 cents, and took it over the river to Matthieu's instrument



The Thomas wrench.

shop and stood over his head workman while he modified it into its present form. Then I took it to Berlin and showed it in the orthopedic section of the congress. No one present had ever seen or heard of this wrench except Robert Jones.

Since then Truax, Greene & Co. borrowed this wrench and made one for a customer; and recently, as you know, Zieman had this wrench and made one for Eikenbary.

It gives me great pleasure to present this to you.

JOHN RIDLON, M.D., Chicago.

INTERNATIONAL CONGRESS OF PHYSICAL THERAPY

To the Editor:—The January 20 letter of your Belgian correspondent describes the celebration of the twenty-fifth anniversary of the Antwerp Physical Therapy Society (THE JOURNAL, March 16, p. 913). He mentions "Dr. Gunzburg, who had the honor of calling the first International Congress of Physical Therapy, which met in Liége in 1905, and who will preside over the next international congress, which is to convene in 1930 in the same city."

This statement would seem to raise a question of fact as data on file here show that the first International Congress of Electrology and Radiology was held in Paris in 1900.

As for the next International Congress of Physical Therapy, to be held next year, information received from Dr. J. Gruber, professor of physical therapeutics at the University of Jena, would seem to propose that its meeting place should be in a country not involved in the late war, preferably either Holland or Switzerland.

In the interest of scientific advancement of methods of treatment by physical therapy, the latter would seem the more advisable plan as, also, would be a consolidation then and there of the separate congresses, common to our European confrères, on balneology, spectral rays, electrology and all other physical measures for disease and injury.

A. B. HIRSH, M.D., New York.

"CALCIUM THERAPY IN ATOPY"

To the Editor:—I have read with interest your editorial "Calcium Therapy in Atopy" in THE JOURNAL, January 26, in which you state that "whenever a therapeutic procedure tends to become a medical fad, it deserves to be subjected to critical scrutiny." You point out that "the advocacy of calcium therapy has attained a vogue that seems to be out of proportion to the demonstrable facts furnished by the clinic." A brief summary of the physiologic importance of calcium salts is given, and finally the statement made that "evidence is required in specific cases that there is need of altering the calcium content of the blood (for hypocalcemia is not a common manifestation) and that the administration of any calcium compound is actually efficacious in changing the circulating level." You then quote from the work of Criep and McElroy in which they "estimated blood calcium in 167 cases of asthma and allied conditions," pointing out that they are convinced that there is no demonstrable calcium deficiency in atopic conditions, although you state that Criep and McElroy admit occasional objective signs of improvement after the intravenous injection of calcium. You draw no conclusions from this work but I for one am left with the feeling that a large percentage of the readers of this article would feel that calcium therapy in conditions showing a normal blood calcium level would probably be of little value. Some work carried out in this laboratory by Minot and Cutler (Guanidine Retention and Calcium Reserve as Antagonistic Factors in Carbon Tetrachloride and Chloroform Poisoning, *J. Clin. Investigation*, December, 1928) shows so strikingly that the efficacy of calcium therapy in any given condition cannot be judged by the blood calcium level alone that I wish to bring this fact to your attention.

We have found in our studies of the toxicity of carbon tetrachloride that enormous doses of this substance can be given to normal dogs without the production of any symptoms whatever. We found by chance that dogs put on a diet of lean meat without bones developed a great susceptibility to carbon tetrachloride. Minot and Cutler in this laboratory showed that this susceptibility was due to calcium lack. Dogs on this deficient calcium diet had a normal blood calcium level, but when given carbon tetrachloride would become seriously ill and even when unconscious and in convulsions could be brought back to normal by the intravenous injection of calcium. The intoxication could be avoided by insuring a proper calcium diet and the intoxication was cured in any stage by various methods which theoretically would increase the ionized calcium in the blood, as the oral administration of calcium chloride or lactate, ammonium chloride, or hydrochloric acid, the intravenous injections of hydrochloric acid, calcium chloride, or gluconate, or the subcutaneous injection of parathyroid extract. I do not wish to go into the theory of the cause of this intoxication but might state that it was found that carbon tetrachloride produces a liver necrosis with an increase of guanidine or guanidine-like substances in the blood with a subsequent fall of blood sugar. As no satisfactory methods are yet available for determining the ionized calcium in the blood, one cannot state that in these susceptible animals there was insufficient ionized calcium or that the calcium therapy increased the available calcium ions. The state in which the calcium occurs in the blood is a matter which is too complicated to discuss here, but it is well recognized that one must take into consideration not only the level of blood calcium but the hydrogen ion concentration, phosphate, and calcium-protein compounds in considering blood calcium physiology.

From these considerations I thought that it might be of interest to those who were treating various clinical conditions to realize that a normal blood calcium level need not in any way justify the idea that calcium therapy will be of no value.

PAUL D. LAMSON, M.D., Nashville, Tenn.

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Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF AEROPHAGIA

To the Editor:—Is there anything you can suggest to me for the disagreeable symptom of aerophagia, which we so often see in cases of anxiety neurosis and the like—I do not mean the regurgitation from pyloric spasm, as seen in vagotonia, etc.? Please do not publish my name.

M.D., Louisiana.

ANSWER.—First is the search for and removal of a possible cause. A complete gastro-intestinal study, including test meal, stool examination, stomach and bowel roentgen examination and, most especially, cholecystography should enable one to discover an organic cause for the epigastric distress that the patient seeks to disperse by the eructation. The fact that belching is a frequent symptom of gallbladder disease must especially be kept in mind.

The aerophagia itself needs psychotherapy chiefly, when an organic cause for it has been eliminated. The emphatic assurance that there is no gross disease, the explanation that the air is not produced in the stomach but swallowed before it is brought up again, and the command to suppress all desire to eructation may suffice to break the habit. In obstinate cases, it may be advisable to hold a small object like a cigaret holder between the teeth, most especially after meals, as it is impossible to swallow air while the mouth is kept open; and eructations do not occur without preliminary swallowing of air. In addition to this, the underlying psychoneurosis requires proper treatment.

EMETINE AND CALOMEL NOT SPECIFICS FOR ITCHING

To the Editor:—I have come across a reference which states that emetine and calomel are specific for the itching of jaundice. These statements were made at a clinical congress of the Connecticut State Medical Society. They were made by a prominent physician and I should like your opinion as to whether the statements are correct. I intend to try these two drugs in a few cases for my own satisfaction.

HAROLD I. GOSLINE, M.D., Ossining, N. Y.

ANSWER.—The meaning of the word "specific" has been subject to considerable difference in interpretation. While in the proper meaning of the term a specific should be a drug or agency that bears a special remedial relation to a condition of disease, the "Eclectic School of Medicine" has used the term so loosely that with these writers it means hardly more than a remedy that may possibly be of use in some cases of a certain disease condition. Only in the latter sense could either emetine or mild mercurous chloride (calomel) be called specific in the itching of jaundice. Emetine, as is well known, is actually specific in the treatment of amebic liver abscess; and mild mercurous chloride has an almost specific value in the treatment of the symptom-complex known as biliousness.

POSSIBILITY OF MALARIAL TRANSMISSION THROUGH INJECTION OF PATIENTS WITH PARESIS

To the Editor:—Is malaria that has been induced in paretic patients in turn contagious to others through the medium of the mosquito or otherwise?

E. J. BROWN, M.D., Cleveland.

ANSWER.—Experimental work as to the possibility of transmitting malaria that has been induced in paretic patients through the medium of the mosquito is lacking. There seem to have been no observations made on this point which have been reported in the medical literature. Injection of malarial parasites into man sets up a nonsexual cycle, which, in the tertian type, is complete in forty-eight hours. The organisms increase in number by geometric progression and it usually is one week after intravenous injection of infected blood before a sufficient number of merocytes rupture at the same time to produce the characteristic reaction. The reaction is caused by a virus liberated at the time of sporulation of these nonsexual parasites. The source of sexual forms is unknown. They may possibly develop from the nonsexual types. The sexual forms appear in the blood stream after from one to two weeks. It is the sexual types that develop in the stomach of the anopheline mosquito. After fertilization of the female by the male in the mosquito's stomach, the resulting vermiculoid cell penetrates into the wall of the mosquito's stomach, enlarges, and develops into a zygote, which ruptures and throws out hundreds of spores which may later be introduced into man by the bite of the mosquito. The nonsexual cycle then begins again in man. Experimental work by Darling has indicated that there must be at least twelve of the sexual type cells per cubic millimeter in the blood of the human host before it is likely that the mosquito can be infected. Therefore, a positive answer to this question can be made only when the following experimental conditions can be met: That persons with known induced malaria be bitten by known uninfected anopheline mosquitoes and that known uninfected persons be later exposed to the bites of these mosquitoes. An approximate answer might be given if careful study of the blood of persons with induced malaria were made to determine the number of sexual forms present per cubic millimeter. If more than twelve gametes per cubic millimeter were found it is possible that a previously uninfected mosquito might transmit the malarial infection. It would seem advisable to employ the usual precautions observed in the treatment of ordinary malarial infection in the case of induced malaria, until experimental work indicates that it is safe to disregard such precautions in caring for patients with induced malaria.

TREATMENT OF PYELITIS IN AN INFANT

To the Editor:—My infant daughter, aged 3 months, has had a severe colon bacillus pyelitis for the past eight weeks. Her weight is 6 pounds 9 ounces (3 Kg.); birth weight, 6 pounds 4 ounces (2.8 Kg.). Treatment and care of the baby is made more difficult because she had a cerebral hemorrhage resulting in paralysis of the left side of the face and difficulty in swallowing. The infant cannot suck and has to be fed with a syringe. Courses of methenamine and courses of alkalis have had no beneficial results. She has had five intraperitoneal blood transfusions. My purpose in addressing you is in regard to treatment. Would it be indicated or safe to try a stock colon bacillus vaccine in this feeble infant? Would you recommend any of the newer urinary antiseptics, dosage and possible manner of administration? Is there any other possible or more certain manner of alkalization besides administration by mouth? Would it be in any way a scientific procedure to administer a course of colon bacillus vaccine to an adult to the point of reaction and to administer blood serum of this adult to the baby? Please omit name.

M.D., Ohio.

ANSWER.—The possibility of malformation of the genito-urinary tract should be considered. The presence of a cerebral hemorrhage is significant. There is no contraindication to the use of vaccines provided the doses are regulated according to the infant's tolerance. Autogenous vaccines seem more favored, although both stock and autogenous vaccines are not credited highly by many observers. Local irrigations of the bladder are advocated, especially by the urologist.

The most satisfactory results can be obtained by the administration of substances yielding an alkaline urine (so-called alkalis) by mouth, although it may require large doses.

HUTCHINSON'S TEETH

To the Editor:—Are Hutchinson's teeth, when typical and well marked, an infallible sign of congenital syphilis? What is the latest opinion regarding accuracy of Wassermann test in diagnosis of syphilis? In what percentage of cases does it show positive? Please cite authorities.

YONE SOMA, M.D., San Antonio, Texas.

ANSWER.—Perfectly typical Hutchinson's teeth are probably pathognomonic of congenital syphilis. However, they can be simulated so closely in other conditions of malnutrition that a diagnosis should hardly be made from the Hutchinson's teeth alone. They are, however, always highly suggestive. Other evidence of congenital syphilis can always be found in cases so profoundly syphilitic as those showing Hutchinson's teeth.

Stein, R.: Leukemias, *M. Rec.* **90:** 147 (July 22) 1916.
Smith, C. M.: Significant Dental Defects in Congenital Syphilis, *Arch. Dermat. & Syph.* **8:** 791 (Dec.) 1923.
Wall, J. S.: Dental Stigmata of Congenital Syphilis, *Arch. Pediat.* **34:** 765 (Oct.) 1917.
Black: Pathology of Hard Tissues of the Teeth, Chicago, 1914.
Karnosh, L. J.: Histopathology of Syphilitic Hypoplasia of the Teeth, *Arch. Dermat. & Syph.* **13:** 23 (Jan.) 1926.

The Wassermann reaction cannot be considered as absolutely specific for syphilis, for positive reactions occur in other diseases (leprosy, relapsing fever, yaws, malarial fevers during febrile stage, and diabetes when acidosis is present). Charles F. Craig reports having obtained twelve positive reactions among 4,000 individuals suffering from diseases other than syphilis, or 0.3 per cent. Vedder reports having only four false positives in 1,049 individuals suffering from other diseases than syphilis, or 0.4 per cent (Bull. 8 War Dept., Surgeon General's Office, Washington, June, 1915, p. 10).

From a practical standpoint it is doubtful whether a more specific test is employed in medicine, the margin of error appearing to be less than 0.5 per cent.

POSSIBLE ANAPHYLAXIS AFTER DIPHTHERIA TOXIN-ANTITOXIN

To the Editor:—Is anaphylactic shock likely to occur in an infant, aged 19 months, who has had one injection of preventive diphtheria toxin-antitoxin, but in the case that the second dose was unavoidably postponed beyond the tenth day? Is the cutaneous reaction test satisfactory indication of sensitivity or its opposite, and if negative would it be entirely safe to go ahead with the second dose? If the patient is sensitive, how long would this sensitivity be likely to last? Should the patient be given the second and third doses only, or should the entire course be given when resumed? Kindly omit name.

M.D., South Carolina.

ANSWER.—Shock would not be likely to occur under the conditions mentioned. Assuming that the patient is susceptible to diphtheria toxin, the second and third doses would seem to be sufficient at this time.

PARATHYROID NOT INDICATED IN INFANTILE ECZEMA

To the Editor:—Can you give me any information regarding the value, if any, of parathyroid extract-Collip administration in infantile eczema? If it is of value, even palliative, assuming an allergic origin of such eczema, what dosage might be used in the case of an infant, aged 6 months? Various feeding mixtures have been used in this case—milk, dextrose, maltose and water, diluted lactic acid milk with and without egg yolk, and diluted evaporated milk. The baby is well nourished and apparently normal in other respects. Kindly omit name.

M.D., Iowa.

ANSWER.—The parathyroids play an important part in mineral metabolism, particularly that of calcium. The extirpation of the glands tends to the production of tetany. It is also thought that the parathyroids exercise an influence on the carbohydrate metabolism and that the assimilation limits for dextrose are lowered by the removal of these glands. There seems to be no theoretical or empiric basis at the present time which would indicate the use of parathyroid gland substance in the treatment of eczema. It is unfortunately true that little is known concerning the origin and pathogenesis of infantile eczema. On merely *a priori* grounds one would be more inclined to think that eczema in young life was due to some form of protein anaphylaxis of either endogenous or exogenous origin, rather than to endocrine malfunction.

POSSIBLE INTERFERENCE WITH PREGNANCY BY MOVABLE SPLEEN

To the Editor:—Kindly let me know the possibilities of a movable spleen interfering with pregnancy and labor in a primipara, aged 28, four months pregnant. The past history is unimportant. The patient had a mild attack of grip one year ago. The bowels are normal. The systolic blood pressure is 112; diastolic, 76. The right tonsils somewhat enlarged. The heart and lungs are normal. The pelvis is normal. The weight is 160 pounds (72.6 Kg.); the height, 5 feet 7 inches (170 cm.). The urine is normal. The blood Wassermann reaction (Kahn) is negative. The hemoglobin is 60 per cent; red blood corpuscles, 4,220,000; white blood corpuscles, 10,300; polymorphonuclears, 79 per cent; lymphocytes, 18 per cent; eosinophils, 3 per cent. Blood smear shows a rare normoblast. The cells are fairly normal in appearance. The abdominal muscles are very firm, without evidences of enteroptosis. A flat roentgenogram revealed a somewhat enlarged spleen about 3 inches below the left ribs. The position of the spleen varies at times; it has been below the level of the navel (lower part of spleen) on one occasion and could be displaced several inches. Is this condition not somewhat rare in a muscular patient? Please omit name.

M.D. Connecticut.

ANSWER.—A spleen that is sufficiently movable to be considered abnormal is a rare occurrence during pregnancy. There need be little fear that the spleen will interfere with pregnancy, because if the spleen descends sufficiently to reach the uterus the latter will push it upward toward its normal position. Unless the spleen can descend to the pelvic region at or near term, and this is hardly likely, no dystocia need be anticipated during labor.

PHYSIOLOGIC SOLUTION OF SODIUM CHLORIDE AS CATHARTIC

To the Editor:—Will you please state your opinion of the use of normal salt solution as a cathartic, as recommended by McCollum and Simonds in their book "Food, Nutrition and Health," page 87.

C. C. DU BOIS, M.D., Warsaw, Ind.

ANSWER.—Physiologic solution of sodium chloride (so-called normal salt solution) is a feeble laxative, active only when gastro-intestinal conditions are fairly normal. The method of using it, "two or more cupfuls of warm physiologic solution of sodium chloride one hour before breakfast," is calculated to bring out this action, if it can be secured. If not, the method is not suitable for that individual.

DIGITALIS OR CAFFEINE FOR HEART IN PNEUMONIA

To the Editor:—In a severe pneumonia, with a rapid (130) and weakening pulse, would digitalis or caffeine sodiobenzoate be preferable? Please omit name.

M.D., New York.

ANSWER.—Digitalis is chiefly of use in the treatment of cardiac irregularities, while caffeine sodiobenzoate acts most especially as a vasomotor stimulant. It does not slow the pulse and may even cause some acceleration. Digitalis is more likely to slow the pulse, though it cannot be relied on to do so in the presence of fever. Both stimulants are frequently employed in unfavorable cases.

EFFECTS OF TOBACCO AND PERSISTENCE

To the Editor:—Would you mention some of the effects which might persist for a year or more after discontinuing the use of tobacco? A man, aged 50, who had used it heavily since early childhood, abruptly stopped it a little over a year ago and since then has had frequent and marked edema of the ankles. Reliable specialists have made a thorough examination with negative results. If any hyperthyroidism is present it is not constant, but it is suggested by rapid pulse and nervous irritability at times. Please omit name.

M.D., Washington.

ANSWER.—There are probably no effects which would persist for one year after the use of tobacco had been discontinued. Quick total withdrawal of tobacco in a patient does not lead to abstinence symptoms as with morphine, except in some neurotic patients who may complain of a little nervousness and insomnia.

In spite of the repeated negative examinations by specialists, the patient has some real trouble if he has edema of the ankles. Insufficient evidence has been given to make a direct diagnosis, but in his case a differential diagnosis of the causes of edema of the ankles has to be made. Such things as heart disease, renal insufficiency or even varicose veins must be considered. A basal metabolism rate should be determined when the patient has a rapid pulse rate and feels irritable.

DIAGNOSIS OF GURGLING ABDOMINAL SOUND DURING MENSTRUATION

To the Editor:—Would you kindly give me your opinion in this case: Woman, negro, 31 years old, family history negative, diseases common to childhood, influenza in 1918, menses regular, single, no children, slight mitral insufficiency, feebleminded, otherwise apparently healthy, menstruated February 11, at which time she noticed an intermittent distention and retraction of the abdomen in the hypogastrium with gurgling sound. Bowels regular, appetite good, no tenderness, no palpable mass in abdomen. Please omit name.

M.D., Arkansas.

ANSWER.—The condition noted may have been due to excessive peristalsis of the stomach or intestine and most likely has no significance at all.

PIGMENTATION FROM INJECTIONS OF IRON CACODYLATE

To the Editor:—I have a patient who injected (self-administered) iron cacodylate, with the results that he has considerable pigmented areas. I wonder if there is any effective treatment and would appreciate any information you may have available on this subject.

R. EARLE SMITH, M.D., Grand Rapids, Mich.

ANSWER.—The pigmented areas may be due to arsenic deposited in the epidermis. The intravenous injections of 1 Gm. of sodium thiosulphate daily and the oral administration of 1 Gm. of the same drug will probably bring about rapid improvement.

CITRATED MILK

To the Editor:—Recently a fellow practitioner mentioned the words "citrated milk" and a discussion came up as to just what was meant. Will you kindly inform me as to just what is meant by "citrated milk" and where it may be obtained.

G. S. FOSTER, M.D., Manchester, N. H.

ANSWER.—In both England and the United States, sodium citrate has been used in infant feeding because of its action in preventing the formation of protein curds. Its effect clinically is not unlike that of lime water. The acceptable explanation is that of Bosworth and Van Slyke. Ordinarily the calcium caseinate is acted on by rennin to form calcium paracaseinate, which is less soluble and is precipitated as curds. When sodium citrate is added in sufficient amount (0.4 Gm. per hundred cubic centimeters or 1.7 grains per ounce of milk) the calcium of the calcium caseinate is replaced to form sodium caseinate or the double salt, calcium-sodium-caseinate. The paracaseinates formed by the rennin acting on sodium caseinate or calcium-sodium-caseinate are very soluble—no precipitate (curds) forms. In lesser amounts, sodium citrate delays or prevents precipitation proportionately. It is customary to use approximately 1 grain of sodium citrate for each ounce of milk in the mixture.

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INDICATION FOR OPERATION IN HYPERNEPHROMA

To the Editor:—I have a patient who has been thoroughly examined by a urologist and a radiologist with the conclusion that he has a growth, probably hypernephroma, involving the right kidney. The left kidney is apparently normal and responds normally to functional tests. Would it probably be best to remove the right kidney? If so, will you please give me detailed instructions how to do it?

M.D., Kentucky.

ANSWER.—Under the conditions recounted, a clear indication for removal of the right kidney is established. While it is true that the remote results of this operation in instances of hypernephroma are not favorable so far as local or general recurrences are concerned, still at the present time nephrectomy furnishes the only chance for the patient. It is generally suggested that the severing of the pedicle should be done as low as possible, because malignant tumors of the kidney have a tendency toward invading the upper part of the renal vein. The method of choice is retroperitoneal operation through a flank incision.

ABSORPTION OF SUGAR (SUCROSE)

To the Editor:—On page 123 of the February issue of *Hygeia*, an unnamed "eminent food scientist" is quoted by the Sugar Institute to the effect that sugar (presumably "cane" or "beet" sugar) appears in the muscles "within a few minutes after ingestion." I have been engaged in various branches of biology for many years and have always understood that sucrose is not absorbed into the blood but must be converted into dextrose and fructose in the small intestine usually some hours after ingestion.

GEORGE T. HARRINGTON, New York.

ANSWER.—Our correspondent is, of course, correct in assuming that the disaccharide sucrose is not absorbed as such into the blood but is converted by digestion into its monosaccharide components before absorption. The postprandial curves of the sugar content of the blood indicate, however, that it does not require a long period before evidences of absorption of these carbohydrate products can be obtained. Therefore, we should question the implication in our correspondent's reference to "some hours after ingestion" if it is intended to indicate a necessarily long delay before the monosaccharides appear in the blood stream for distribution. The error in the advertisement consists in the implication that the sugar which is transported to the muscles is identical in make-up with that of the cane sugar ingested. Both the intake and the transported carbohydrate are "sugars" according to the usual chemical nomenclature. The product that reaches the muscle, however, is the monosaccharide derivative. This ought, perhaps, to be made clear in the text of the advertisement.

EPILEPTIFORM SEIZURES IN THE AGED

To the Editor:—I will be grateful for any assistance in the following case: A well-to-do married woman, aged 70, has for several years been subject to attacks resembling petit mal. Thus far these attacks have been occurring at times when she has been sitting in her chair. Most frequently the attacks have occurred while she has been reading aloud to her husband. She loses consciousness for about a minute, her legs jerk and arms twitch, and she mumbles instead of reading, but she quickly recovers and starts reading aloud again where she left off. She does not fall from her chair. This patient is mother of two healthy children and has never had an illness since childhood. She has several brothers and sisters living and well. She herself is active and walks everywhere about town and has no dyspnea or other signs of cardiac decompensation. Her blood pressure is low (90 systolic, 65 diastolic) and heart action slightly irregular, skipping beats frequently. This irregularity disappears after exercise. The blood pressure after exercise is 90 systolic and 60 diastolic. What is the significance of these epileptiform seizures, and can anything be done to prevent their increasing frequency? Please omit name.

M.D., Ohio.

ANSWER.—Epileptiform seizures in the advanced ages usually have for their etiology some cardiovascular pathologic condition. The most frequent condition is cerebral arteriosclerosis as evidenced by the examination of the retinal blood vessels. The lowered blood pressure and the irregular heart action suggest the possibility of a cerebral anemia. Some attempt should be made to treat the hypotension, possibly by administration of suprarenal extracts. The attacks may be decreased or stopped by increasing doses of phenobarbital.

VOLUNTARY EXPULSION FROM STOMACH

To the Editor:—In Queries and Minor Notes (THE JOURNAL, February 16) appears an item regarding drinking and expulsion of large quantities of water submitted by Dr. R. C. Thackery. I judge that this is the act shown in Malden, Mass., about a year and a half ago. While I did not attend the performance I heard much comment about it and incidentally talked with "Hadji Ali," as he consulted me about his pet dog at the time. As I recall the man, he was from 35 to 40 years of age, of average height but having a noticeably large body, not fat but quite robust.

In addition to the feat mentioned by Dr. Thackery, the actor (if it was the same man) swallowed several nuts, from ten to fifteen probably, about the size of a marble and of different colors. He would regurgitate (?) one at a time with unvarying accuracy and the colored nut called for by any one in the audience.

It was said at the time that he was to be examined fluoroscopically at one of the local hospitals to study this phenomenal ability. Whether it was done I do not recall. Possibly some Malden physician may have the data. I do remember that no one was the wiser for questioning Hadji Ali, who said that he had been doing it for more than twenty years.

My object in writing is to call attention to the fact, if I was correctly informed, that solids as well as liquids were expelled by him voluntarily.

D. K. COLLINS, D.V.M., San Mateo, Calif.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

AMERICAN BOARD OF OPHTHALMIC EXAMINERS: Portland, Ore., July 8, and Philadelphia, Oct. 21, 1929. Sec., Dr. William H. Wilder, 122 South Michigan Avenue, Chicago.

ARKANSAS — Homeopathic: Little Rock, May 14, 1929. Sec., Dr. Allison A. Pringle, Homeopathic Board of Medical Examiners, Eureka Springs, Ark.

DISTRICT OF COLUMBIA: Washington, April 9, 1929. Sec., Dr. Edgar P. Copeland, Suite 110—1801 Eye Street, Washington, D. C.

ILLINOIS: Chicago, April 9-11, 1929. Supt. of Registration, Mr. V. C. Michels, Dept. of Registration and Education, Springfield, Ill.

NEBRASKA—Basic Science: Lincoln, May 14-15, 1929. Chief, Mrs. Clark Perkins, Bureau of Examining Boards, State House, Lincoln.

NEVADA: Carson City, May 6-8, 1929. Sec., Dr. Edward E. Hamer, Board of Medical Examiners, Carson City, Nev.

NEW MEXICO: Santa Fe, April 8-9, 1929. Sec., Dr. W. T. Joyner, 20-21 First National Bank Building, Roswell, N. M.

Illinois October Examination

Mr. V. C. Michels, superintendent of registration, Illinois Department of Registration and Education, reports the examination held at Chicago, Oct. 2-4, 1928. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Of the 70 candidates examined, 66 passed and four failed. Thirty-one physicians were licensed through reciprocity with other states and seven by endorsement of credentials. The following colleges were represented:

College	Year Grad.	Per Cent
PASSED		
Rush Medical College	(1928) 77, 77, 79, 80, 81, 82, 82, 82, 82, 82, 83, 84, 85, 85, 85, 86, 86, 86, 87, 88	
Northwestern Univ. Med. School	(1928) 75, 78, 78, 80, 81, 82, 86 *	
University of Illinois College of Medicine	(1928) 76, 78, 78, 79, 79, 80, 81, 82, 82, 82, 82, 82, 83, 84, 85, 86, 86	
Loyola Univ. School of Med.	(1928) 76, 77, 78, 78, 78, 79, 80, 82, 88	
Harvard University Medical School	(1925)	82
Washington University School of Medicine	(1926)	81, 83
St. Louis College of Physicians and Surgeons†	(1922)	81
St. Louis University School of Medicine	(1927) 75, 76, 80	
University of Nebraska College of Medicine	(1927)	85
University of Oklahoma School of Medicine	(1927)	78
Jefferson Medical College of Philadelphia	(1927)	80
University of Manitoba Faculty of Med.	(1926) 82, (1928) 79	
FAILED		
Bennett Medical College, Chicago	(1912)	58
Loyola University School of Medicine	(1928)	71
University of Erlangen, Germany	(1922)	61
University of Königsberg, Germany	(1927)‡	71

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
University of Colorado School of Medicine	(1913), (1927)	Colorado
Rush Medical College	(1897)	Iowa
Indiana University School of Medicine	(1917), (1927) (2)	Indiana
State University of Iowa College of Medicine	(1926)	Iowa
Detroit College of Medicine and Surgery	(1889)	Michigan
Washington University School of Medicine	(1927), (2)	Missouri
Ensworth Medical College, St. Joseph	(1888)	Missouri
St. Louis University School of Medicine	(1918), (1923), (1926) (3), 1927) (5)	Missouri
University of Nebraska College of Medicine	(1925)	Nebraska
Creighton University School of Medicine	(1927) (3)	Nebraska
Syracuse University College of Medicine	(1907)	Porto Rico
University of Cincinnati College of Medicine	(1928)	Ohio
University of Oklahoma School of Medicine	(1927)	Oklahoma
Meharry Medical College	(1893)	Arkansas
Marquette University School of Medicine	(1927)	Wisconsin
University of Berlin, Germany	(1921)	Iowa

College	Year Grad.	Endorsement with
LICENSED BY ENDORSEMENT		
Rush Medical College	(1927) U. S. N., (1927), (1928) (3)	N. B. M. Ex.
Northwestern University Medical School	(1928) (2)	N. B. M. Ex.

* No grade given.
† Admitted to examination on basis of having completed internship of several years in addition to graduation from medical college.
‡ Verification of graduation in process.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

DISEASES OF THE LIVER, GALL-BLADDER AND BILE-DUCTS. By Sir Humphry Rolleston, K.C.B., M.D., Hon.D.Sc., Regius Professor of Physic in the University of Cambridge, and John William McNee, D.S.O., M.D., D.Sc., Associate Physician to University College Hospital. Third edition. Cloth. Price, 42/—. Pp. 884, with illustrations. London: Macmillan & Company, Ltd., 1929.

New edition of a well known work, printed in small type and not so advanced as American practice in this field.

DIE TECHNIK DER BLUTGRUPPENUNTERSUCHUNG FÜR KLINIKER UND GERICHTSÄRZTE. Nebst Berücksichtigung ihrer Anwendung in der Anthropologie und der Vererbungs- und Konstitutionsforschung. Von Dr. Fritz Schiff, Abteilungsdirektor am Städtischen Krankenhaus im Friedrichshain-Berlin. Second edition. Price, 8.60 marks. Pp. 91, with 32 illustrations. Berlin: Julius Springer, 1929.

New edition of manual on iso-agglutination and blood grouping with particular reference to medicolegal procedure.

SPINAL ANESTHESIA [SUBARACHNOID RADICULAR CONDUCTION BLOCK]: PRINCIPLES AND TECHNIQUE. By Charles H. Evans, M.D., Clinical Assistant, N. Y. Post-Graduate Medical School and Hospital. Introduction by W. Wayne Babcock, M.D., F.A.C.S., Foreword by Charles Gordon Heyd, M.D., F.A.C.S. Cloth. Price, $5.50 net. Pp. 203, with 41 illustrations. New York: Paul B. Hoeber, Inc., 1929.

The technic of a delicate method of anesthesia, well illustrated and quite up to date.

PHOTOGRAPHS OF THE FUNDUS OCULI. A Photographic Study of Normal and Pathological Changes Seen With the Ophthalmoscope. By Arthur J. Bedell, M.D., Attending Ophthalmologist, St. Peter's Hospital. Leather. Price, $25. Pp. 317, with illustrations and plates. Philadelphia: F. A. Davis Company, 1929.

Handsomely prepared edition of the photographic studies of the fundus oculi for which the author has received recognition in the Scientific Exhibit of the American Medical Association.

GRUNDRISS DER AUGENHEILKUNDE FÜR STUDIERENDE UND PRAKTISCHE ÄRZTE. Von Prof. Dr. A. Brückner, Direktor der Universitäts-Augenklinik, Basel, und Prof. Dr. W. Meisner, Direktor der Universitäts-Augenklinik, Greifswald. Second edition. Paper. Price, 25 marks. Pp. 601, with 230 illustrations. Leipzig: Georg Thieme, 1929.

New edition of a short German textbook of ophthalmology.

MARRIAGE AND THE STATE BASED UPON FIELD STUDIES OF THE PRESENT DAY ADMINISTRATION OF MARRIAGE LAWS IN THE UNITED STATES. By Mary E. Richmond, and Fred S. Hall. Cloth. Price, $2.50. Pp. 395. New York: Russell Sage Foundation, 1929.

A study of our varied laws regarding marriage and divorce and of the inefficiency of their administration.

COMPARATIVE NEUROLOGY. A Manual and Text for the Study of the Nervous System of Vertebrates. By James W. Papez, B.A., M.D., Cornell University. Cloth. Price, $6. Pp. 518, with 315 illustrations. New York: Thomas Y. Crowell Company, 1929.

Technical consideration of the brains and nervous systems of various species.

THE WORKS OF GEBER. Englished by Richard Russell, 1678. A new edition with introduction by E. J. Holmyard, M.A., D.Litt. Cloth. Price, $2. Pp. 264, with illustrations. New York: E. P. Dutton & Company, Inc., 1928.

Biography of an important medieval chemist with a reprint of some of his contributions.

LES ACCIDENTS MORTELS DE L'ANESTHÉSIE LOCALE. Étude expérimentale, clinique et thérapeutique. Par le Dr. André Klotz. Paper. Pp. 186. Paris: Jouve & Cie, 1929.

Monograph on accidents in local anesthesia with some recognition of the important work of the joint committee of the American Medical Association on this subject.

THE CARE OF THE CHILD. By Alton Goldbloom, B.A., M.D., Lecturer in Pediatrics, McGill University. Cloth. Price, $1.50. Pp. 240, with illustrations. New York: Longmans, Green & Company, 1928.

Another exposition of the care of the child saying the usual things in a slightly different way.

ANGINA PECTORIS. By Harlow Brooks, M.D., Visiting Physician, City Hospital. Harper's Medical Monographs. Cloth. Price, $2.50. Pp. 164. New York: Harper & Brothers, 1929.

Handbook for the public based on the treatment of several hundred cases.

PARTNERSHIPS, COMBINATIONS AND ANTAGONISMS IN DISEASE. By Edward C. B. Ibotson, M.D., B.S. Cloth. Price, $3.50. Pp. 348, with 11 portraits. Philadelphia: F. A. Davis Company, 1929.

A monograph devoted to a new method of consideration of disease.

DIE KRANKHEITEN DES HERZENS UND DER GEFÄSSE. Von Dr. Ernst Edens, a. o. Professor an der Universität München. Paper. Price, 66 marks. Pp. 1057, with 239 illustrations. Berlin: Julius Springer, 1929.

Exhaustive treatise on the diseases of the heart and blood vessels.

TROUBLES DES ÉCHANGES NUTRITIFS DANS LA TUBERCULOSE PULMONAIRE. Par R. Monceaux, chef de laboratoire a l'Hôpital Cochin. Paper. Pp. 446, with 12 illustrations. Saint-Cloud: Girault, 1929.

Monograph on metabolism in tuberculosis.

A RESEARCH IN MARRIAGE. By G. V. Hamilton, M.D. Cloth. Price, $10. Pp. 570. New York: Albert & Charles Boni, Inc., 1929.

The questions and answers in a systematic study of the married lives of 200 people.

STUDIES IN ILLUMINATION. II: Relationship of Illumination to Ocular Efficiency and Ocular Fatigue Among the Letter Separators in the Chicago Post Office. By Langdon R. White, Assistant Surgeon, United States Public Health Service, Rollo H. Britten, Associate Statistician, United States Public Health Service, James E. Ives, Physicist, United States Public Health Service, and Lewis R. Thompson, Surgeon, United States Public Health Service. Public Health Bulletin, No. 181. Prepared by Direction of the Surgeon General. Paper. Price, 15 cents. Pp. 58, with illustrations. Washington, D. C.: Supt. of Doc., Government Printing Office, 1929.

STUDIES ON OXIDATION-REDUCTION: XIV. Equilibrium Potentials of 2,6-Dibromobenzenone Indophenol-2'-Sodium Sulphonate, 2,6-Dibromobenzenone Indophenol-3'-Sodium Sulphonate, 2,6-Dichlorobenzenone Indo-2'-Chlorophenol, and 2,6-Dimethylbenzenone Indophenol. By Wallace L. Hall, Assistant Chemist, United States Public Health Service, Paul W. Preisler, Fellow in Medicine, National Research Council, and Barnett Cohen, Chemist, United States Public Health Service. Supplement No. 71 to the Public Health Reports. Paper. Price, 10 cents. Pp. 26. Washington, D. C.: Supt. of Doc., Government Printing Office, 1928.

BURDETT'S HOSPITALS AND CHARITIES, 1929, BEING THE YEAR BOOK OF PHILANTHROPY AND THE HOSPITAL ANNUAL. An Exhaustive Record of Charitable Work for the Year, the Most Useful and Reliable Guide to the Hospitals and Asylums of Great Britain and Ireland, Medical Schools and Colleges, Nursing and Convalescent Institutions, Consumption Sanatoria, Religious and Benevolent Institutions and Dispensaries. Founded by Sir Henry Burdett, K.C.B., K.C.V.O. Thirty-Ninth Year. Cloth. Price, 21/—. Pp. 946. London: Faber & Gwyer, Ltd., 1929.

THE MEDICAL DEPARTMENT OF THE UNITED STATES ARMY IN THE WORLD WAR. Volume IV: Activities Concerning Mobilization Camps and Ports of Embarkation. By Maj. Albert S. Bowen, M.C. Prepared under the direction of Maj. Gen. M. W. Ireland, the Surgeon General. Cloth. Price, $1.75. Pp. 494. Washington, D. C.: Supt. of Doc., Government Printing Office, 1928.

DIE RÖNTGENTECHNIK IN DIAGNOSTIK UND THERAPIE. Ein Lehrbuch für Studierende und Ärzte. Von Dr. S. Glasscheib, Spezialarzt für Röntgenologie, Berlin-Warschau. Mit einem Geleitwort von Dr. Max Cohn dirigierendem Arzt der Röntgenabteilung des Städtischen Krankenhauses im Friedrichshain, Berlin. Paper. Price, 13.60 marks. Pp. 294, with 145 illustrations. Berlin: Julius Springer, 1929.

WHAT EVERY ONE SHOULD KNOW ABOUT EYES. By F. Park Lewis, M.D., F.A.C.S., Vice-President, National Society for the Prevention of Blindness. The National Health Series edited by the National Health Council. Cloth. Price, 30 cents. Pp. 70, with illustrations. New York: Funk & Wagnalls Company, 1928.

SIXTEENTH ANNUAL REPORT OF THE COLLIS P. HUNTINGTON MEMORIAL HOSPITAL FOR CANCER RESEARCH AND OF THE LABORATORIES OF THE CANCER COMMISSION OF HARVARD UNIVERSITY, 1927-1928. (For the Year Ending June 30, 1928.) Cancer Commission of Harvard University. Paper. Pp. 44. Boston, 1928.

PRAKTISCHE DIFFERENTIALDIAGNOSTIK FÜR ÄRZTE UND STUDIERENDE. Herausgegeben von Professor Dr. Georg Honigmann. Band I: Innere Medizin. Teil 8: Differentialdiagnose der Blutkrankheiten. Von Albert Herz, Privatdozent an der Universität Wien. Paper. Price, 8 marks. Pp. 548-635, with 8 illustrations. Dresden: Theodor Steinkopff, 1929.

CARE OF THE MOUTH AND TEETH. By Harvey J. Burkhart, D.D.S., LL.D., Director, Rochester Dental Dispensary, Rochester, New York. The National Health Series edited by the National Health Council. Cloth. Price, 30 cents. Pp. 45, with illustrations. New York: Funk & Wagnalls Company, 1928.

THIRTIETH BIENNIAL REPORT OF THE DEPARTMENT OF PUBLIC HEALTH OF CALIFORNIA FOR THE FISCAL YEARS FROM JULY 1, 1926, TO JUNE 30, 1928. Paper. Pp. 241, with illustrations. Sacramento, 1929.

Book Notices

A TEXT-BOOK OF PHARMACOLOGY AND THERAPEUTICS OR THE ACTION OF DRUGS IN HEALTH AND DISEASE. By Arthur R. Cushny, M.A., M.D., LL.D. Ninth edition revised by C. W. Edmunds, A.B., M.D., Professor of Materia Medica and Therapeutics in the University of Michigan, and J. A. Gunn, M.A., M.D., D.Sc., Professor of Pharmacology in the University of Oxford. Cloth. Price, $6 net. Pp. 743, with 73 illustrations. Philadelphia: Lea & Febiger, 1928.

Between the appearance of the former edition of this work and the present volume Professor Cushny, one of the leading pharmacologists of the world, died. His book had passed through eight revisions, which were an indication of the great demand in which it had been as a textbook for more than a quarter of a century. The present edition has been edited by Drs. C. W. Edmunds and J. A. Gunn; it has been brought into line with the latest U. S. Pharmacopeia, and it constitutes in every sense of the word an adequate textbook.

NO. 3 CANADIAN GENERAL HOSPITAL (McGILL) 1914-1919. Edited and Compiled by R. C. Fetherstonhaugh. With a foreword from Field-Marshall His Royal Highness the Duke of Connaught, K.G., K.T., K.P. Cloth. Price, $5; De Luxe edition, $10. Pp. 274, with illustrations. Montreal: Burton's, Ltd., 1928.

Not many hospitals overseas had a larger experience in the World War than the unit of McGill University, Montreal (Canadian General Hospital Number 3). From Aug. 17, 1915, to May 12, 1919, 143,762 patients were admitted. Within its walls and under its tents more than 1,900 persons died. This is an account of the hospital from its conception by the dean of the faculty of medicine of Montreal, Dr. H. S. Birkett, who was its commanding officer until 1917. The story is one of great loyalty and devotion to the care of sick and mangled men. There were a few happy occasions when royalty, Sir William Osler and prominent officers of the allied armies visited the hospital, but the undertone of the story is sad. The wounded suffered not alone. Lieut. Col. John McCrae, chief medical officer, wrote in his diary in January, 1917, "The cruel cold is still holding. Every one is suffering, and the men in bed in the wards cannot keep warm. For my own part, I do not think I have ever been more uncomfortable. Everything is so cold that it hurts to pick it up. To go to bed is a nightmare and to get up a worse one." Summer was not always kind. Aug. 28, 1917, a storm tore the outer roofs of twenty marquees and some tents sheltering hospital personnel to ribbons; windows were smashed, trees fell, but hospital number 3 gladly took in the patients and personnel of three other hospitals in the vicinity which had been leveled to the ground. Canadian General Hospital Number 3 landed in England and soon crossed to France to open at Dannes-Camiers, and later at Boulogne. It performed great service after the battles of the Somme, Vimy Ridge, the offensive in Flanders in 1917, Germany's offensive in 1918, and the counter attack by Marshal Foch that led up to the armistice. The book is not a medical report but a day to day account of a hospital that was deeply involved in the greatest of wars.

CHEMICAL ENCYCLOPÆDIA. An Epitomized Digest of Chemistry and Its Industrial Applications. By C. T. Kingzett, F.I.C., F.C.S. Fourth edition. Cloth. Price, $10. Pp. 807. New York: D. Van Nostrand Company, 1928.

Here, in alphabetical order, the reader has a dictionary of the substances, the process and the theories of modern chemistry. It is, in every sense of the word, a practical reference work which will be found useful to every one of the professions and trades in which the uses of chemistry are concerned. Furthermore, adequate bibliographic references give to the reader original sources on which the information is based.

A TEXTBOOK OF BIOCHEMISTRY FOR STUDENTS OF MEDICINE AND SCIENCE. By A. T. Cameron, M.A., D.Sc., F.I.C., Professor of Biochemistry, Faculty of Medicine, University of Manitoba. With a foreword by Professor Swale Vincent, LL.D., M.D., D.Sc., Professor of Physiology, University of London. Cloth. Price, $5.50. Pp. 462, with 14 illustrations. New York: Macmillan Company, 1928.

This little volume of thirty-three chapters covers a wide range in the field of biochemistry. In view of the numerous subdivisions and a peculiar order of presentation there probably are more repetitions than one might expect in a book of this size. The work is purposely presented in a rather dogmatic style because the author considers this the more desirable policy toward medical students at the present time. An elementary, almost semipopular, introductory chapter of general information is followed by one on catalysis and biochemical catalysis, although the student presumably has not yet studied the chemistry of the substances acted on by enzymes. In the next chapter the success at explaining the p_H terminology is doubtful. Following this is a section of eight chapters covering the foodstuffs, their derivatives and related compounds. The organization here could be improved on and a somewhat more advanced and, in part, more accurate presentation seems desirable. Thus the action of bases on reducing sugars is not touched on and the importance of understanding this action in connection with the quantitative estimation of dextrose is not even mentioned. The precipitation of proteins by various reagents is not explained and in the discussion on the iso-electric point of proteins it is stated that "the iso-electric points are not far removed from neutrality, though they vary with different proteins." The table following this statement, however, clearly shows that the iso-electric points of proteins actually vary from p_H 4.7 to p_H 6.9. The paragraph describing Dakin's modification for the separation of amino-acids had better be omitted in its present form. The student is not given any idea as to how the probable molecular weights of proteins have been arrived at and hence there is no discussion as to the validity of the conclusions arrived at. The third and fourth sections are clear presentations on the chemistry of digestion, circulation, excretion and intermediate metabolism. Here, rarely indeed are questions asked, although we know that there are many controversial biochemical problems involved. Interesting material on the chemistry of reproduction, on energy factors in metabolism and on diet are given in the next two sections. The last section, devoted to the chemistry of immunology, industrial biochemical developments and an introduction to pharmacology, is followed by a "final word" reviewing the life-death cycle and emphasizing our real ignorance of living processes.

DIE CHIRURGIE DER BRUSTORGANE. Von Ferdinand Sauerbruch. Band I: Die Erkrankungen der Lungen. Teil 1: Anatomie. Allgemeine pathologische Physiologie. Allgemeine Diagnostik. Allgemeine Technik. Erkrankungen der Brustwand. Verletzungen von Brustfell und Lungen. Eitrige und brandige Entzündungen der Lungen. Bronchektasen. Operation der Embolie der Lungenarterien. Von H. Alexander, H. Chaoul und W. Felix. Third edition. Cloth. Price, 188 marks. Pp. 916, with 916 illustrations. Berlin: Julius Springer, 1928.

This is the first half of the first volume of the third edition of Sauerbruch's Surgery of the Chest. In the second edition the first volume was complete as one part and consisted of 931 pages. In the present edition the part that has appeared covers essentially the same material as the first 585 pages of the first edition, but the material has been expanded until it now comprises 907 pages. There has been a real need for a new edition, particularly part I, for it has been out of print for several years. Marked expansion of the field and changing experience demanded addition and reorganization of the original presentation, but the author's change of residence from Munich to Berlin delayed the work. The general scheme has not been changed. In this edition, as in the previous ones, the author has presented in detail certain errors so that others may be prevented from making similar mistakes. The new edition adds certain important experimental work, done by his collaborators, particularly Nissen, dealing with questions of pathology which are of practical value. The portions dealing with operative technic present only methods used by Sauerbruch himself which he has found of value. The volume begins with an exhaustive presentation of the topographic anatomy of the thoracic organs, which is contributed by Walter Felix of Zurich. This covers 246 pages and is followed by a chapter on physiology of the lungs covering forty-two pages, and a chapter of thirteen pages dealing with general diagnosis, contributed by the same author. The next section of the work, a magnificent presentation of clinical roentgenography of diseases of the organs of the chest, including the heart, is contributed by Henri Chaoul alone, whereas in the former edition it was contributed by him and Eduard Stierlin, who has since died. The section comprises 327 pages, an increase of 140 pages over the previous edition. This section of the work is the finest presentation of roentgenology of the chest in any single textbook and is really an atlas on the subject since it contains almost 500 roentgeno-

grams of actual cases, showing diseases of the lungs, esophagus, mediastinum and heart. These illustrations are all excellent and, together with the text, could well be published as a separate work. The remainder of the volume, contributed by the author, considers the preparation and technic of intrathoracic procedures; anesthesia in thoracic surgery; the progress and after-treatment of intrathoracic operations; the prevention of pneumothorax, including the various devices for securing differential pressure; the technic of opening the thorax; operations on the lung; exploratory thoracotomy, and bandaging. The final chapters discuss in great detail diseases and changes of the chest wall and their relation to the intrathoracic organs; injuries of the pleura and the lung; purulent and putrefactive inflammation of the lung; bronchiectasis; the operative closure of bronchial and pulmonary fistulas, and the operative removal of blood clots from the pulmonary artery (Trendelenburg's operation). The index shows that the second part of the first volume, which will soon appear, will contain the surgical treatment of pulmonary tuberculosis, the parasitic diseases of the lung, tumors of the lung, and the surgical treatment of bronchial asthma. The illustrations include color plates, photographs of actual cases, color plates showing steps in the individual operations, photomicrographs and diagrams. The color plates and photomicrographs of diseases of the lung are particularly valuable. The only drawback to the volume is the absence of an index, the only means of finding material desired being from the table of contents; but the index will probably appear in the second part of volume I. This edition, as did its predecessors, constitutes the classic on lung surgery by the master in the field. Since lung surgery is undergoing rapid development and the author has even more extensive material than ever before, surgeons who are interested in his special field will welcome this new contribution, as eight years has elapsed since the second edition appeared.

ÜBER DIE AUFZUCHT FRÜHGEBORENER KINDER IM BASLER KINDERSPITAL UND DEREN ERGEBNISSE VON 1922 BIS 1927 MIT BESONDERER BERÜCKSICHTIGUNG DER FRÜHGEBURTENRACHITIS. Von Dr. A. Hottinger, Oberassistent am Kinderspital, Basel. Paper. Price, 8.40 marks. Pp. 136, with 51 illustrations. Berlin: S. Karger, 1928.

This monograph is divided into two parts. In part I the author writes of the care of the premature infant; the mortality, treating in detail the special causes of death; and morbidity, with details covering dyspepsia, icterus, birth trauma, syphilis, spasmophilia, anemia, grip and secondary intestinal conditions. In part II he deals specifically with rickets as seen in the premature infant. He first writes of the analogy and the differences in the course of rickets in the full term and the premature infant. Following this are chapters covering the relationship in the frequency of rickets as regards birth weight and season; the early diagnosis as related to clinical and roentgenologic observations; the later roentgen diagnosis; serum and urine analysis; and histologic examination, well illustrated by photomicrographs and covering a study of thirty-three premature and twenty-seven full term infants as controls. In the final chapter, treatment and prophylaxis of rickets are discussed. The author relates his experiences with calcium lactate, metallic phosphorus, cod liver oil, egg yolk, radiation, irradiated milk and irradiated ergosterol. The bibliography is complete.

TUMORS ARISING FROM THE BLOOD VESSELS OF THE BRAIN: ANGIOMATOUS MALFORMATIONS AND HEMANGIOBLASTOMAS. By Harvey Cushing, Professor of Surgery, Harvard Medical School, and Percival Bailey, Associate Professor of Surgery (Elect), University of Chicago. Cloth. Price, $7.50. Pp. 219, with 159 illustrations. Springfield: Charles C. Thomas, 1928.

This lavishly illustrated report of clinical and anatomic studies of unusual intracranial tumors is in two parts, each with a separate bibliography. Fourteen angiomas, five of them venous, are first reported, and in part II, eleven more solid or cystic vascular tumors which the authors at present regard as hemangioblastomas, all beneath the cerebellar tentorium, are then dealt with. One in the last group resembles hypernephroma (case XXI). There was no postmortem examination and, although the disease extended over several years, that is by no means exceptional with hypernephromas. About a fifth of the illustrations are taken from reports by others in medical literature, or are of conditions found by others clinically or after death. Full credit is given for their source. One illustration (fig. 100) is reproduced from a colored drawing which the authors in another place (*Arch. Ophth.* **57**:447 [May] 1928) credit to Dr. W. H. Wilmer of Baltimore. Figure 14 is not clear. A number of illustrations of simply the healed scalp wounds are evidence of the absence of postoperative cerebral hernia and also show the site of the operation and bone flap. The drawings and other illustrations of the morbid anatomy are exceptionally fine. Studies previously reported from Cushing's clinic have already contributed heavily to the astounding changes that have been and still are being made in conceptions of the genesis of brain tumors and in their nomenclature; but it is doubtful whether all so far attained in these directions is permanent. Dandy (*Arch. Surg.* **17**:190 [Aug.] 1928) uses the term arteriovenous aneurysm for growths which these authors call angiomas. Mallory apparently has demonstrated that the tumors called meningiomas by Cushing and Bailey are in reality fibromas, and considerable confirmation of this view is apparent in the study of the dura by Rothstein, Avery and Richter (*J. Infect. Dis.* **42**:1 [July] 1928). Three tumors previously reported by Cushing and Bailey as meningiomas, they suggest in the work under review (footnote p. 209), may possibly belong to the hemangioblastomas. Many other less recent examples of disagreement about the nature of these tumors and of the names they should bear are contained in the thorough review of the literature in this monograph. The entire work is concerned with rare intracranial or intracerebral tumors seen in a huge experience in brain surgery where intensive study is devoted to obtaining a complete understanding of the disease in each patient. And not the least remarkable feature of the work reported is that nearly all of the twenty-five patients with these rare vascular tumors regained their health after sometimes one, sometimes several, operations.

THROMBO-ANGIITIS OBLITERANS: CLINICAL, PHYSIOLOGIC AND PATHOLOGIC STUDIES. By George E. Brown and Edgar V. Allen. Collaborating in Pathology with Howard R. Mahorner. Mayo Clinic Monographs. Cloth. Price, $3 net. Pp. 219, with 61 illustrations. Philadelphia: W. B. Saunders Company, 1928.

Taking for their theme the disease thrombo-angiitis obliterans, also known as Buerger's disease, the authors have added many observations from their wide experience and have given a critical and comprehensive review on the subject. In the matter of pathology they agree in the main with Buerger's views except that they have been unable to find the acute inflammatory lesions in the deep vessels, illustrated in figure 84, page 334 (acute lesion in a large artery), of Buerger's book on Circulatory Disturbances. Since specific treatment of the cause of thrombo-angiitis obliterans is still unknown and since prophylaxis administered before the advent of the acute stage is also a closed book, much credit is due to these indefatigable workers for their studies on methods of enhancing the circulation. The treatment by nonspecific proteins is discussed at length in a manner sufficiently lucid to guide the practitioner, and "sympathetic neurectomy" is described with high optimism.

PEDIATRICS FOR THE GENERAL PRACTITIONER. By Harry Monroe McClanahan, A.M., M.D. Cloth. Price, $6. Pp. 606, with 230 illustrations. Philadelphia: J. B. Lippincott Company, 1929.

As medicine has branched into specialized fields, the general practitioner has been confronted with the problem of acquiring more and more knowledge in a limited time. In order to glean the facts necessary for intelligent handling of the patient, he has been forced to forge his way through a large amount of material in the various textbooks. Many of the facts, while important from the academic standpoint, are of passing interest to the practitioner. This book, written by one who has had long experience in the practice of children's diseases, fulfils the need for a practical text. Extended discussions of pathology and history have been eliminated. Diagnosis, treatment and management of the diseases of infants and children are thoroughly but concisely discussed. A digest of the current literature has been inserted where needed, and a bibliography has been appended to each chapter. This adds much to the value of the book, for it enables the general practitioner to read of late investigations and discoveries without the tedious process of consulting current periodicals. The illustrations throughout are illuminating. The book has been written with the definite purpose of presenting concisely the clinical problems of pediatrics. It does just this.

Medicolegal

Malpractice and Contributory Negligence

(Leadingham v. Hillman (Ky.), 5 S. W. (2d) 1044)

The appellant, Leadingham, sued the appellee because of alleged malpractice. Leadingham was treated by the appellee for a fracture of both bones of the forearm. Evidence was offered in the trial court to show lack of care or of knowledge and skill on the part of the defendant, including evidence that the defendant took off the splints at the end of the third week and that this was too soon. The defendant testified that he took the splints off after five weeks. That the plaintiff's right arm was practically useless, that he could work only with his left arm, and that the wrist was not right and the arm crooked was not disputed. The plaintiff claimed that the defendant admitted responsibility for the condition of the arm and said that if the plaintiff would have the bones refractured and reset, he, the defendant, would pay the hospital expenses. The defendant admitted offering to pay the plaintiff $100 for the purposes named. The plaintiff did not avail himself of this offer. At the conclusion of the evidence, the court instructed the jury to find for the defendant, apparently because the plaintiff had refused to have the bones refractured and reset. From the judgment for the defendant, the plaintiff appealed to the court of appeals of Kentucky.

Quoting from 8 Ruling Case Law, 448, Section 18, the court of appeals said:

> It is not, as a matter of law, the duty of the injured person to submit to a serious surgical operation for the purpose of effecting a cure. He is only required to exercise his best judgment in the matter, and to do what a reasonable person would do under the circumstances.

It was the duty of the physician, the appellee in this case, to use such ordinary care, skill and diligence as physicians and surgeons in the vicinity and in the same general line of practice ordinarily have and exercise in like cases. It was the duty of the patient, the appellant here, to use such care as a man of ordinary prudence would ordinarily use under like circumstances; if he failed to do this, he could not recover for any of the consequences of his own want of ordinary care. But, said the court of appeals, again quoting from Ruling Case Law:

> To constitute a bar to the suit, the negligence of the patient must have been an active and efficient contributing cause of the injury. In other words, contributory negligence to defeat right of action must be simultaneous and cooperating with the fault of the defendant, must have entered into the creation of the cause of action, and have been an element in the transaction which constituted it. Where the fault of the patient was subsequent to the fault of the physician, and merely aggravated the injury inflicted by the physician, it only affects the amount of the damages recovered by the patient.

If the defective condition of the appellant's arm made it necessary for him to have the arm rebroken and reset, this was because of the appellee's negligence. Even though the appellant had had the bones refractured and reset, he could still have maintained his action to recover the damages he sustained because of the physician's negligence. His refusal to submit to such treatment prevented a recovery only to the extent to which the damages were increased by that refusal and even then, only if in the exercise of ordinary care he should have submitted to that treatment. These were questions for determination by the jury. The judgment of the court below was reversed and the cause remanded for a new trial.

Use of Books in Cross-Examination

(State v. Shahane (N. D.), 219 N. W. 132)

Shahane was convicted of murder in the second degree and appealed to the supreme court of North Dakota. In the course of cross-examination, the state's attorney asked an expert witness produced on behalf of the defendant the following question: "Now doctor, getting down to the subject of epilepsy generally, and not with reference to this case, is it not a fact that it is not all epileptics who suffer mental derangement or mental deterioration, for some of them retain a peculiar normal mind?" Counsel for the defendant objected on the ground that the state's attorney was reading from a book. The objection was overruled, and the witness answered, "No, it is not a fact." Thereupon, the state's attorney asked: "So if such an authority as Wharton and Stille's Medical Jurisprudence states that it its a fact, would you say they are wrong?" Objection to this question was overruled. The witness was not asked what medical books he had read on the subject, or whether he had read Wharton and Stille, and counsel for the defendant objected because the state's attorney got indirectly before the jury the theory of Wharton and Stille as opposed to that of the defendant's witness. The supreme court held that this testimony was not prejudicial under the circumstances of the case, but that the objection should have been sustained. It is permissible, said the court, to prepare questions from medical books and to cross-examine a medical expert on the theory of the medical works on which he claims to base his opinion; but it is not permissible to use medical books in opposition to medical expert testimony given on the stand, because the authors are not under oath and are not available for cross-examination, and the defendant is entitled to be confronted with the witnesses against him.

Gifts in Anticipation of Death

(Begovich v. Kruljac et al. (Wyo.), 267 Pac. 426)

A gift in anticipation of death (donatio mortis causa) partakes of the nature of a legacy in that it is not fully effective until after the death of the donor; if the donor recovers, he may reclaim the property given. It partakes of the nature of an ordinary gift among living persons (donatio inter vivos) in that the thing given must be delivered during the lifetime of the decedent and ownership must be susceptible of transfer by delivery. In gifts among the living, the primary purpose is to give to the donee immediate control of and dominion over the property. The bare intent on the part of the donor to give is not sufficient; no gift is made unless it is perfected by actual delivery during the donor's lifetime, fully and completely giving dominion over and control of the gift. Control and dominion over property given in anticipation of death, however, do not pass to the donee until after the death of the donor. Delivery of the gift, accordingly, is not for the purpose of transferring possession and enjoyment but for the purpose of preventing fraud and making the intentions of the donor certain and definite. The donor need not be in extremis and certain of speedy death; such a gift may be made by one apprehensive of death from a present malady or in imminent peril, as from a necessary surgical operation. Gifts in anticipation of death are ordinarily, however, resorted to by intending donors because the facilities for executing the more formal disposition by will are not available or because the death of the donor is so imminent in point of time as to preclude preparation of the more formal documents. They are in their very nature emergency measures.

In the present case, the decedent, Mike Begovich, June 11, 1922, was preparing to leave his home to go to another city for an operation for cancer or ulcers of the stomach. He gave to his partner, Kruljac, one of the appellees, $2,000, instructing him to put it into their joint business for the benefit of two children of his landlady, with whom he had lived and boarded for nine years. The donor died four days after having made this gift, as the result of the operation in anticipation of which the gift was made. After the death of the donor, his brother, Marko Begovich, the appellant, as administrator of the estate of the deceased, brought action against the partner of the deceased and the landlady, as guardian ad litem of the minors, who were the beneficiaries of the gift. The trial court held that the gift was in fact a completed lawful gift in anticipation of death and rendered judgment in favor of the beneficiaries. From this judgment, the administrator appealed to the supreme court of Wyoming. It was contended on behalf of the administrator that there was no evidence to prove a valid gift in anticipation of death. The appellate court readily concluded that the first requisites to the making of such a gift were fully satisfied; namely, that the subject of the gift was susceptible of passing by delivery and that the intention of the donor to give was clear and manifest. The only point in question was, then, whether the required delivery of the gift could be completed by delivery to a third person, as in the present case, instead of to the donees themselves. The appellate court held that it is not essential that the delivery be made to the donee himself. If it is made to a third person with direction that the

gift be turned over to the donee after the death of the donor, that is sufficient. The delivery in this case was, in the opinion of the court, as complete as the circumstances allowed, even aside from the fact that the donees were minors, so that delivery could not have well been made to them personally. In the opinion of the appellate court, the gift was a valid gift in anticipation of death, and the judgment of the court below was affirmed.

Liability of Charitable Institutions

(Geiger v. Simpson Methodist-Episcopal Church of Minneapolis (Minn.), 219 N. W. 463)

This was an appeal to the supreme court of Minnesota arising out of a suit against a church, engaged in the usual benevolent, charitable and religious activities of such a society and doing no business for profit. The plaintiff claimed to have been injured as the result of the negligence of the defendant. The principles discussed and underlying the decision are identical with those that go toward the determination of the liability of charitable hospitals. This matter was considered in *McInery v. St. Luke's Hosp.*, 122 Minn. 10, 141 N. W. 837, 46 L. R. A. (N. S.) 548, based on an injury to a hired servant of the hospital. In that case the court reasoned, in substance, that no good can come from permitting one charitable institution, without liability, negligently so to injure its servants or others that the burden of the future care and maintenance of those so injured must necessarily be cast on other private or public charitable organizations. The court held that no such situation should be created by an arbitrary rule of exemption; such exemption should be granted by the legislature, if at all. In *Mulliner v. Evangelischer Diakonniessenverein*, 144 Minn. 392, 175 N. W. 699, the defendant, a charitable corporation, was held liable for the failure of nurses and employees properly to care for a patient, the court adopting the rule of liability as being more just to the persons injured and best serving the charitable purposes of the institution. In the present case, the court could find no reason for departing from the rule laid down in the Mulliner case, just cited. Charity begins at home. It may reasonably be said that charitable institutions must first fairly compensate those who are injured and damaged by the negligence of the officers and servants of the institution in the conduct of its affairs, before going further afield to dispense charity and do good. Men and corporations alike are required to be just before being charitable. Such institutions are rapidly growing in number, in resources, and in influence. They should be encouraged, aided and protected in carrying on their work to the full extent that it may be done without injustice to others. They are generally favored by being relieved, partly or wholly, from the burden of taxation. In the opinion of the court, it would not be good public policy to relieve them from liability for torts or negligence. Where innocent persons suffer through the fault of such institutions, their officers and their servants, the institution should not be exempted. That ruling, in the long run, will tend to increase efficiency and benefit the institutions and the public, as well as persons so injured. It is almost contradictory to hold that an institution organized to dispense charity shall be charitable and extend aid to others but shall not compensate or aid those injured by it in carrying on its own activities. The judgment in favor of the plaintiff and against the charitable corporation, which was the defendant in this case, was therefore affirmed.

Mortality Tables and Substandard Risks

(Roalsen v. Oregon Stevedoring Co., Inc. (Wash.), 267 P. 433)

One Andresen, while in the employ of the Oregon Stevedoring Co., Inc., was accidentlly killed. The present action was brought to recover damages for the benefit of the wife and children of the decedent. The trial resulted in a verdict and judgment in favor of the plaintiff, from which the defendant appealed to the supreme court of Washington. Among the errors alleged to have been committeed by the trial court was the instruction given to the jury as to Andresen's expectancy of life, without the introduction of a mortality table. It was further objected that in any event it was not shown that Andresen came within the class of risks to which such tables are applicable. The appellate court said, however, that the court takes judicial notice of standard mortality tables and, without taking evidence on the matter, can properly instruct the jury as to the expectancy of life of a given person where the matter is pertinent to the inquiry before it. The effect of such tables as evidence is for the triers of the facts. They, in determining the life expectancy of any person, may take into consideration his vocation, occupation and condition of health, both mentally and bodily, and may find that these conditions destroy the value of the tables as evidence. Such considerations go only to determine the weight of the tables as evidence, but the tables are not for that reason inadmissible. The judgment of the court below was affirmed.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Mobile, April 16-19. Dr. D. L. Cannon, 519 Dexter Avenue, Montgomery, Secretary.

American Association for Thoracic Surgery, St. Louis, April 25-27. Dr. Ethan Flagg Butler, Robert Packer Hospital, Sayre, Pa., Secretary.

American Climatological and Clinical Association, Old Point Comfort, Virginia, May 2-4. Dr. A. K. Stone, Auburn Street, Framingham Center, Mass., Secretary.

American College of Physicians, Boston, April 8-12. Mr. E. R. Loveland, 133 South 36th Street, Philadelphia, Secretary.

American Gastro-Enterological Association, Atlantic City, May 6-7. Dr. W. J. Mallory, 1720 Connecticut Ave., N. W., Washington, D. C., Sec'y.

American Gynecological Society, Old Point Comfort, Va., May 20-22. Dr. Floyd E. Keene, 133 South 36th Street, Philadelphia, Secretary.

American Laryngological Association, Atlantic City, May 20-23. Dr. George M. Coates, 1721 Pine Street, Philadelphia, Secretary.

American Neurological Association, Atlantic City, May 27-29. Dr. Henry A. Riley, 870 Madison Avenue, New York, Secretary.

American Otological Society, Atlantic City, May 22-24. Dr. Thomas J. Harris, 104 East 40th Street, New York, Secretary.

American Pediatric Society, St. Louis, May 20-22. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.

American Proctologic Society, Detroit, May 13-15. Dr. Walter A. Fansler, LaSalle Building, Minneapolis, Secretary.

American Psychopathological Association, Atlanta, Ga., May 17. Dr. Martin W. Peck, 520 Commonwealth Avenue, Boston, Secretary.

American Society for Clinical Investigation, Atlantic City, May 6. Dr. J. T. Wearn, Boston City Hospital, Boston, Secretary.

American Surgical Association, Cleveland, May 2-4. Dr. Lincoln Davis, 205 Beacon Street, Boston, Secretary.

Arkansas Medical Society, Hot Springs, May 7-9. Dr. W. R. Bathurst, 810 Boyle Building, Little Rock, Secretary.

Association of American Physicians, Atlantic City, May 7-8. Dr. J. H. Means, Massachusetts General Hospital, Boston, Secretary.

California Medical Association, San Diego, May 6-9. Dr. Emma W. Pope, 593 Market Street, San Francisco, Secretary.

Connecticut State Medical Society, Waterbury, May 22-23. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.

District of Columbia, Medical Society of, Washington, D. C., May 1. Dr. C. B. Conklin, 1718 M Street, N. W., Washington, D. C., Sec'y.

Georgia, Medical Association of, Macon, May 8-10. Dr. Allen H. Bunce, 139 Forrest Avenue, N. E., Atlanta, Secretary.

Illinois, State Medical Society, Peoria, May 21-23. Dr. Harold M. Camp, Lahl Building, Monmouth, Secretary.

Iowa State Medical Society, Des Moines, May 8-10. Dr. Tom B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.

Kansas Medical Society, Salina, May 7-9. Dr. J. F. Hassig, 804 Huron Building, Kansas City, Secretary.

Louisiana State Medical Society, New Orleans, April 9-11. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 23-25. Dr. John T. King, Jr., 1211 Cathedral Street, Baltimore, Secretary.

Minnesota State Medical Association, St. Paul, May 13-15. Dr. E. A. Meyerding, 11 W. Summit Avenue, St. Paul, Secretary.

Mississippi State Medical Association, Gulfport, May 14-16. Dr. T. M. Dye, Box 295, Clarksdale, Miss., Secretary.

Missouri State Medical Association, Springfield, May 13-16. Dr. E. J. Goodwin, 901 Missouri Building, St. Louis, Secretary.

National Tuberculosis Association, Atlantic City, May 27-30. Dr. C. J. Hatfield, Henry Phipps Institute, Philadelphia, Secretary.

Nebraska State Medical Association, Omaha, May 14-16. Dr. R. B. Adams, Center McKinley Building, Lincoln, Secretary.

New Hampshire Medical Society, Manchester, May 28-29. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.

North Carolina, Medical Society of the State of, Greensboro, April 22-24. Dr. L. B. McBrayer, Southern Pines, Secretary.

Ohio State Medical Association, Cleveland, May 7-9. Mr. Don K. Martin, 131 East State Street, Columbus, Executive Secretary.

Oklahoma State Medical Association, Oklahoma City, May 27-29. Dr. C. A. Thompson, Barnes Building, Muskogee, Secretary.

Oregon State Medical Society, La Grande, May 16-18. Dr. F. D. Stricker, Medical Arts Building, Portland, Secretary.

South Carolina Medical Association, Charleston, May 7-9. Dr. E. A. Hines, Seneca, Secretary.

South Dakota State Medical Association, Mitchell, May 7-9. Dr. John F. D. Cook, Langford, Secretary.

Tennessee State Medical Association, Jackson, April 9-11. Dr. H. H. Shoulders, Lambuth Building, Nashville, Secretary.

Texas, State Medical Association of, Brownsville, May 21-23. Dr. Holman Taylor, Medical Arts Building, Fort Worth, Secretary.

West Virginia State Medical Association, Martinsburg, May 21-23. Mr. Joe W. Savage, 303 Professional Building, Charleston, Executive Sec'y.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Medical Sciences, Philadelphia

177: 153-308 (Feb.) 1929

Persistence of Mitral Stenotic Murmur in Presence of Auricular Fibrillation. C. Eggleston, New York.—p. 153.
*Sympathectomy and Paravertebral Alcohol Injection in Treatment of Angina Pectoris. E. P. Richardson and P. D. White, Boston.—p. 161.
*Symptom of Sighing in Cardiovascular Diagnosis. P. D. White and R. G. Hahn, Boston.—p. 179.
*Blood Chemical Studies in Arterial Hypertension. R. H. Major, Kansas City, Kan.—p. 188.
*Blood Pressure of Patients with Diabetes Mellitus. S. F. Adams, Rochester, Minn.—p. 195.
*Experimental Study of Influence of Ferromagnetic Cubic and Paramagnetic Amorphous Iron Oxide on Blood: In Simple Anemia and Normally. C. A. Doan, F. R. Sabin and C. E. Forkner, New York.—p. 201.
*Treatment of Sprue with Liver Extract. A. L. Bloomfield and H. A. Wyckoff, San Francisco.—p. 209.
*Coincident Diabetes Mellitus and Pernicious Anemia. L. H. Hitzrot, Philadelphia.—p. 213.
*Intracutaneous Salt Solution Test in Thyrotoxicosis. J. M. Mora, Chicago.—p. 219.
*Simple Exercise Tolerance Test for Circulatory Efficiency, with Standard Tables for Normal Individuals. A. M. Master and E. T. Oppenheimer, New York.—p. 223.
Water Balance in Cardiac Decompensation. R. Van Valzah, E. D. McKinley and W. S. Middleton, Madison, Wis.—p. 244.
*Hereditary Type of Angioneurotic Edema. H. F. Dunlap and W. S. Lemon, Rochester, Minn.—p. 259.
*Ipsolateral Edema and Contralateral Jaundice Associated with Hemiplegia and Cardiac Decompensation. I. H. Page, New York.—p. 273.

Sympathectomy in Treatment of Angina Pectoris.—Among eight patients having eleven operations reported on by Richardson and White, there were two operative deaths, a mortality of 25 per cent of cases, and 19 per cent of operations. Lasting benefit followed operation in four cases, and was directly attributable to it in three. In only one case out of five did satisfactory relief follow removal of the left superior cervical ganglion alone, although another was considerably improved. In the other two patients benefited, afferent connections from the heart must have been severed to a greater or less extent. During the course of operation, no constant effect on the blood pressure or pulse rate was noted as a result of manipulation of the sympathetic chain. The excitement and mental strain of going through an operation, even under local anesthesia, did not in any case precipitate an anginal attack. Horner's syndrome was regularly produced but there was no obvious change in the superficial circulation of the face. The blood pressure in the two arms was approximately equal, even in the patient surviving removal of the stellate ganglion. As an alternative means of treatment, it was decided to try the effects of paravertebral injection of 85 per cent alcohol as advocated by Swetlow. Altogether eight patients have been treated by this means, two of them receiving two injections. These cases as a whole are comparable in seriousness to those treated by operation; the patients were either incapacitated or bedridden on account of the severity and frequency of their attacks. Three of them had coronary thrombosis and so would not have been suitable risks for operation; they survived the paravertebral alcohol injection without difficulty. No lasting ill effects have as yet occurred in any case. In two cases, rather alarming immediate effects were observed: in one case a considerable fall in blood pressure, in another severe pain presumably from pleural irritation. Injection has the definite advantage of being a safer procedure. Sympathetic relief has more constantly been secured by paravertebral injections than by operation in these two series of cases. While there has been a tendency for pain to recur in one or two cases, the relief has generally lasted as long as the patients have been followed, up to eighteen months in one case.

Symptom of Sighing in Cardiovascular Diagnosis.—Statistical analysis made by White and Hahn showed that in 400 normal control individuals sighing is a common condition, but of frequent occurrence in only 19 per cent. It was especially common as a frequent event in young women in the third decade of life (33 per cent), and it is generally recognized that it is this sex at this age that shows the greatest degree of nervous instability. Further statistical analysis showed that frequent sighing is relatively rare in heart disease with or without congestive failure if there is no effort syndrome or marked nervousness (3 per cent of 100 cases). In effort syndrome without heart disease, excessive sighing is very frequent (80 per cent of 100 cases). When effort syndrome or marked nervousness is combined with organic heart disease, excessive sighing is common (74 per cent of fifty cases). It is evident that in these cases the sighing comes from the nervous state and not from heart disease. Respiratory tracings in five cases of heart disease without congestive failure or nervousness, and in eight cases of heart disease with congestive failure but without nervousness, did not show an abnormal number of deep breaths in any; those in eight cases of effort syndrome without heart disease showed an excessive number of deep breaths in six (75 per cent); those in eight cases of combined effort syndrome or marked nervousness and heart disease showed increase of sighing respirations in six (75 per cent), and those in twelve cases without either effort syndrome or heart disease did not show an abnormal number of deep breaths in any. Of 200 routine unselected cases studied by respiratory tracings in the metabolism laboratory, twenty-five showed abnormal sighing. Nervous instability was the commonest condition found in this group; heart disease was not present in any of the cases. Sighing was excessive in four of ten cases of hyperthyroidism and in two of ten cases of hypothyroidism.

Blood Chemical Studies in Arterial Hypertension.—Pursuing studies reported on previously, Major presents additional evidence. The only positive statement made is that certain hypertensive patients show in their blood an increased amount of some substance giving the same color response as guanidine and having certain chemical properties like those exhibited by the guanidine bases.

Blood Pressure of Patients with Diabetes Mellitus.—An analysis made by Adams of the blood pressure of 1,001 diabetic patients does not provide clear evidence to show that diabetes of itself promotes hypertension. If the blood pressure of diabetic patients is elevated, it suggests the presence of some associated abnormality which of itself is responsible for the hypertension.

Effect of Ferromagnetic and Paramagnetic Iron Oxide on Blood.—Reporting on the effect of ferromagnetic and paramagnetic iron oxide in the normal rabbit and in rabbits suffering from a simple anemia after hemorrhage, Doan et al. suggest that this treatment in clinical cases of secondary anemia may be a disadvantage and should not be undertaken without further experimental data.

Treatment of Sprue with Liver Extract.—The results of treatment by liver extract of two cases of sprue are reported by Bloomfield and Wyckoff. The diagnosis of sprue instead of pernicious anemia was based on the presence of considerable amounts of free hydrochloric acid in the stomach juice, the character of the stools, the absence of neurologic changes and (in one case) residence in the tropics. Responses similar to those usually obtained in pernicious anemia resulted, with a rise in the reticulocytes, in an increase in the blood count and an improvement in the gastro-intestinal symptoms, with gain in weight and general well being. Incidentally, it has been pointed out that the typical response may be obtained after a single large dose of liver extract, as well as after daily smaller doses. The results are additional evidence of a close relationship between sprue and pernicious anemia.

Coincident Diabetes Mellitus and Pernicious Anemia.—Hitzrot asserts that six instances of diabetes associated with pernicious anemia have been found reported in the medical literature. The anemia was considered the first condition to

develop in three cases, the diabetes the first in two; in the remaining instance, the two conditions were found simultaneously. Necropsy observations in two instances confirmed the diagnoses. In the other four, the blood picture and course of the disease were taken as evidence of pernicious anemia. Another case is reported by Hitzrot in which the diabetes evidently antedated the anemia by several months, and was not in evidence during the height of the anemia as observed in the hospital. It reappeared, however, several weeks after the patient had entered a complete remission on a Minot-Murphy liver diet. The diabetes, furthermore, was mild, with two acute exacerbations not associated with the anemic state. This study indicates, at least so far as reported clinical observations are concerned, that there exists no consistent relationship between primary pernicious anemia and diabetes. The cases so far discovered should be considered as coincidences.

Intracutaneous Salt-Solution Test in Thyrotoxicosis.—The intracutaneous salt-solution test was studied by Mora in forty-two cases of thyrotoxicosis, before and after operation. There was a definite decrease in the disappearance time of the wheal before operation. After operation, with the return to normal of the basal metabolic rate and the patient's general condition, the disappearance time also became normal. In a general way, the greater the toxemia, the less the time required for the wheal to disappear. The disappearance time of the intradermally injected saline solution paralleled the basal metabolic rate as an index of the severity of the thyrotoxicosis. The literature pertaining to this test is reviewed.

Simple Exercise Tolerance Test for Circulatory Efficiency.—The test described by Master and Oppenheimer utilizes habitual muscular movements, causing a minimum of excitement and no dizziness or vertigo. It consists in ascending and descending two steps, each 9 inches high. The number of foot-pounds of work performed is easily calculated. The criterion for the satisfactory performance of the test is a return of the systolic blood pressure and of the pulse rate to the pre-exercise (resting) level within two minutes after the end of exercise. Tables have been constructed giving foot-pounds of work per minute performed by normal individuals, with variations for sex, age, height and weight. Curves of foot-pounds of work per minute, plotted against age, show that until about puberty girls perform more efficiently than boys, but after 13 years of age males do better than females. The sharpest rise in the curve occurs between 10 and 20 years of age. Males reach a maximum of about 3,795 foot-pounds of work at from 26 to 29 years, and women a maximum of 2,950 at about 24 years. After these optimum ages a gradual but steady decline occurs. Men at the optimum age have a work capacity of about one eighth horsepower, and women, of about one-eleventh. Exercise tolerance varies directly with body weight up to the optimum weight of from 160 to 165 pounds (73 to 75 Kg.) for men, and from 135 to 145 pounds (61 to 66 Kg.) for women. Beyond these weights the exercise tolerance falls. The relation of work capacity to height is a direct one; the taller the individual, the greater is his exercise tolerance. The practical importance of the procedure is that the patient can be tested to determine (1) whether his exercise tolerance is within normal limits, and (2) what his actual maximal tolerance is in foot-pounds. The test is said to be helpful in the diagnosis and the grading of circulatory efficiency and insufficiency, and for tracing the changes arising therefrom during the progress of an organic condition of the heart or during recovery. It may also be used in giving advice as to sports and games.

Hereditary Type of Angioneurotic Edema.—The case reported by Dunlap and Lemon occurred in a family consisting of twenty-four members representing four generations. Six members of this family probably affected with the disease died suddenly, two of undoubted edema of the glottis, two of obscure gastro-intestinal colic, one of dropsy and one of heart disease. In this respect the family does not differ from the twenty-one others that have been described in the literature. Three cases of angioneurotic edema or urticaria, although not of the familial type, are also reported because of the diversity of symptoms and the special studies which were carried out on blood volume and the type of capillaries.

Edema and Jaundice Associated with Hemiplegia and Cardiac Decompensation.—Two cases of ipsolateral edema and contralateral jaundice on the basis of cardiac decompensation following hemiplegia are presented by Page and the relation of this phenomenon to cellular permeability is discussed.

American J. Tropical Medicine, Baltimore

9: 1-82 (Jan.) 1929

*Protection Tests with Serum of Persons Recovered from Yellow Fever in Western Hemisphere and West Africa. N. P. Hudson, J. H. Bauer and C. B. Philip, New York.—p. 1.
Experimental Studies on Diphyllobothrium Latum. T. B. Magath, Rochester, Minn.—p. 17.
*Relation of Syrue to Pernicious Anemia: Blood Changes in Forty-Five Cases of Sprue. Améico Serra, San Juan, Porto Rico.—p. 49.
Studies in Dispersion of Anopheles Mosquitoes. H. W. Kumm, Edenton, N. C.—p. 67.
Penetration by Infective Hookworm Larvae of Materials Used in Manufacture of Shoes. G. C. Payne, New York.—p. 79.

Protection Tests with Serum of Persons Recovered from Yellow Fever.—The positive results of protection noted by Hudson et al. indicate that an attack of yellow fever in human beings induces an immunity transferable to *Macacus rhesus*. Serum from four individuals of eleven tested, who recovered from yellow fever in the Western Hemisphere, and all of seven samples of West African serum (one pooled), protected *M. rhesus* against lethal doses of a West African strain of yellow fever virus. Furthermore, serum from persons who experienced this disease in different epidemics in various parts of South America and West Africa prevented experimental yellow fever. No relation was determined between the protective ability of human serum and the time elapsing between the illness and the drawing of blood for the test. These positive protection tests add evidence to the identity of yellow fever as it occurs in the Western Hemisphere and West Africa.

Relation of Sprue to Pernicious Anemia.—Serra concludes that pernicious anemia and sprue are two distinct disease entities. Important points of differentiation between the two diseases are emaciation, small liver and lack of utilization of fat in sprue and fever, spinal cord changes and achlorhydria in pernicious anemia. Examination of the gastric contents probably constitutes the best single method of differentiation between the two diseases. Low blood serum calcium values are found in sprue. The value of this finding in diagnosis is still debated, though studies in Porto Rico indicate that the disturbance is nonspecific. Nitrogen retention is common in pernicious anemia but is generally absent in sprue. Estimation of the bilirubin content of the blood seems to be of real value in the differentiation of the two diseases, the icteric index being high in uncomplicated pernicious anemia, while in sprue the small number of cases studied showed values within normal limits. There is a striking similarity between the blood pictures of pernicious anemia and tropical sprue. Both diseases are accompanied by high color index, macrocytosis and leukopenia with relative lymphocytosis. Nucleated red cells, especially megaloblasts, are rare in sprue, while polychromatophilia, anisocytosis, poikilocytosis and basophilic stippling are much less marked than in pernicious anemia. Reticulated cell counts are also lower in sprue. In general, the blood picture of sprue is much more aplastic in type than that of pernicious anemia.

Annals of Surgery, Philadelphia

89: 161-320 (Feb.) 1929

Future of Surgery. W. Martin, New York.—p. 161.
Biologic Effects of Roentgen Ray and Radium as Aid in Diagnosis of Neoplastic Diseases. W. S. Stone and L. F. Craver, New York.—p. 176.
*Value of Methylene Blue-Gentian Violet 5 Per Cent in Preoperative Skin Preparation. K. Roberts, New York.—p. 183.
*Alcoholized Nerve Graft. P. W. Sweet, Centralia, Wash.—p. 191.
*Paravertebral Alcohol Injection in Angina Pectoris. W. J. Mixter and J. C. White, Boston.—p. 199.
Mortality of Operations on Thyroid Gland: Analysis of 388 Operations Performed During 1927. J. L. DeCourcy, Cincinnati.—p. 203.
Perforation of Peptic Ulcer: 100 Cases. H. P. Brown, Jr., Philadelphia.—p. 209.
*Mesenteric Injuries and Intestinal Viability. T. C. Bost, Charlotte, N. C.—p. 218.
Interpretation of Cholecystographic Findings: Operative Check in 277 Cases. J. T. Case, Battle Creek, Mich.—p. 222.
*Relief of Obstructive Jaundice from Tumors in Head of Pancreas. W. Walters and C. S. McVicar, Rochester, Minn.—p. 237.

*Subcutaneous Rupture of Stomach: Traumatic and Spontaneous. O. Glassman, New York.—p. 247.
Ruptured Gastroduodenal Ulcer: Twenty-Seven Cases. W. L. Wolfson and I. Gray, New York.—p. 264.
Myoma of Appendix. A. R. Koontz, Baltimore.—p. 272.
Primary Carcinoma of Vermiform Appendix. J. Selinger, New York. —p. 276.
Appendectomy Wound Repair and Hernia. J. H. Garlock, New York. —p. 282.

Value of Methylene Blue-Gentian Violet in Preoperative Skin Preparation.—Experimental and clinical results have convinced Roberts that a solution containing 5 per cent commercial methylene blue (methylthionine chloride, U. S. P.) crystals, 5 per cent commercial gentian violet crystals in 50 per cent commercial grain alcohol (named by him MBGV5) is superior to ether, to 2 per cent mercurochrome in aqueous solution, to 3 per cent trinitrophenol, and to 2 per cent iodine in alcohol as an antiseptic for the preoperative preparation of the skin. It kills the common skin containing organisms immediately. It will retain its ability to sterilize for at least two and one-half hours. It is readily visible. It is nontoxic and nonirritating to the skin. It does not interfere with the reparative processes. It is stable for at least a month. It did not interfere with the physiology of the skin in 277 clean abdominal cases in which MBGV5 following an ether scrub was used as a skin preparation; only three patients became infected. In each case a definite known reason other than failure of the antiseptic was the cause of the infection.

Alcoholized Nerve Graft.—In his experimental work, Sweet used nerves from the sciatic brachian plexus and vagus of a fetal calf almost at term (from 60 to 70 cm. in length), which were removed aseptically and tied to a glass microscope slide so as to keep them straight. These were placed immediately into 80 per cent alcohol and after twenty-four hours were taken from the glass slides and sealed in test tubes with enough 50 per cent alcohol to cover them well. Segments were removed from the sciatic nerve and pieces of the alcoholized nerve were put in their place. Specimens were removed at intervals of from seven days to seven months following operation. The following results were obtained: The alcoholized grafted nerve died; a great amount of fibrous tissue formed at both the proximal and the distal ends of the graft, and regenerating neuraxons, finding it difficult to penetrate this mass, became more or less interlaced in the attempt; some passed out into the loose connective tissue, which route they preferred to the graft, or became lost in the adjoining structures. The clinical results and histologic observations do not justify the conclusion that the alcoholized nerve graft should be the one of choice; the regenerative power of nerves is so great that good results may often be obtained not because of any particular method used but in spite of it. The ideal nerve graft has yet to be demonstrated.

Paravertebral Alcohol Injection in Angina Pectoris.—Eight patients have been treated by Mixter and White by paravertebral injection of 5 cc. of 80 per cent alcohol. Injections were made for left-sided pain seven times and for right-sided pain twice. All but one were having angina pectoris while at rest. Three had had coronary occlusion, and one had coronary occlusion six weeks after treatment. The injection gave more than 90 per cent relief on the side injected in three cases and partial relief in three. In one case the injection was practically a failure. One patient is completely relieved to date (two weeks). Following seven of the nine treatments there was troublesome pain and hyperesthesia.

Mesenteric Injuries and Intestinal Viability.—Surgical teaching is that a mesenteric tear of more than 2 inches at its intestinal attachment requires resection, while shorter lengths require only suturing. The clinical cases reported by Bost, supplemented by some experimental work that he has since done, would tend to show that a much more extensive sacrifice of the blood supply can be tolerated without the necessity of a resection.

Relief of Obstructive Jaundice from Tumors in Head of Pancreas.—In the eight cases reported by Walters and McVicar, cholecystgastrostomy was performed on seven deeply jaundiced patients, and cholecystduodenostomy on one patient for relief of jaundice due to obstructive lesions in the head of the pancreas. An anastomosis of at least 2.5 cm. in diameter, and sometimes 3.5 cm., was made in every instance of cholecystgastrostomy. In the case in which choledochoduodenostomy was performed, the immense dilatation of the common duct made possible an anastomotic opening of almost 2 cm. in diameter. Six patients are living, free of jaundice and of itching. Three of these feel well, and two have gained 20 pounds (9 Kg.) each. Another reports his condition as improved. One reports that he is continually ailing and unable to work. One of the patients on whom cholecystgastrostomy was performed for carcinoma in the head of the pancreas died on the seventh day from what clinically appeared to be renal and hepatic insufficiency. At necropsy the only cause for death found was slight localized peritonitis. Another patient operated on lived comfortably for twenty months after operation. Necropsy by his home physician revealed biliary cirrhosis and terminal pneumonia. Although the tumor in the head of the pancreas had disappeared, the pancreas showed evidence of chronic inflammation.

Subcutaneous Rupture of Stomach.—Glassman collected from the literature reports of thirty-one cases of subcutaneous gastric rupture after severe and moderate traumas. Twenty-one, or 65.6 per cent, showed other injuries, mostly internal. The spleen is the organ most often injured in association with rupture of the stomach, there being seven cases, or 22 per cent, and the liver almost as frequently—six cases, or 18.7 per cent. Two new cases are added. One patient had been struck across the abdomen with a plank. At operation, a rent running transversely 4 inches in length was found in the fundus of the stomach, on the anterior surface. The abdominal cavity was filled with blood and gastric contents. The patient died fifteen hours after operation. At necropsy, in addition, a laceration of the renal surface of the spleen 2 cm. in diameter was found. The second patient was a boy who, after eating freely of beans, ran after his father, tripped and fell. A 3.5 cm. rent in the anterior wall of the stomach near the greater curvature and running parallel to it was found and sutured. The patient died and at necropsy a second laceration of the stomach was disclosed.

Archives of Dermatology & Syphilology, Chicago

19: 175-346 (Feb.) 1929

*Rôle of Idiosyncrasy and Allergy in Dermatology. B. Bloch, Zurich, Switzerland.—p. 175.
Clinical Aspects of Allergy in Dermatology. J. V. Klauder, Philadelphia. —p. 198.
*Cutaneous Neuroma Simulating Keloid. W. W. Duemling, Ann Arbor, Mich.—p. 226.
*Paronychia. H. Sutherland-Campbell, Los Angeles.—p. 233.
*Dermatomyositis. C. Davison, Pittsburgh.—p. 255.
Dermatomyositis or Scleroderma? W. Allan, Charlotte, N. C.—p. 265.
*Liquid Oxygen in Dermatology. H. G. Irvine and D. D. Turnacliff, Minneapolis.—p. 270.
Use of Parathyroid Extract in Lichen Urticatus. T. Cornbleet, Chicago. —p. 281.

Rôle of Idiosyncrasy and Allergy in Dermatology.—Bloch propounds the question whether idiosyncratic dermatoses (urticaria, Quincke's edema, toxicoderma, eczema, drug eruptions, and their closely related diseases, asthma, hay-fever and serum sickness) represent allergic reactions as regards the type and mechanism of their pathogenesis; that is, whether they are caused by the contact of an antigen with its own specific cellular fixed antibody. The answer to this question is that a pathogenesis of this kind has been proved in a great many cases of idiosyncratic diseases, which manifest themselves clinically as asthma, hay-fever, toxicoderma and urticaria (Quincke's edema), and serum disease. This has been proved by the method of Prausnitz and Küstner.

Cutaneous Neuroma Simulating Keloid.—Duemling reports an unusual, rapidly forming tumor of the skin, closely resembling, clinically, an enormous keloid. Histologic examination showed that the tumor was made up of connective tissue bundles, which surrounded bundles of medullated nerve fibers.

Paronychia Caused by Handling Oranges.—Sutherland-Campbell reports in detail one of two cases in which pus occurred under the fingernails of orange workers. He says that certain of the cull oranges are a source of fungous infection to man. The skin of the orange is highly resistant to this fungus. The pulp of the orange is readily infected by the fungus. As far as can be determined, only those orange workers whose fingers are frequently in contact with the pulp

or juice of the orange acquire this fungous infection. The yeastlike organism that the author believes to be the etiologic factor in these cases is the spore form, or gonidia, of a fungus of the family *Mucoraceae*. The species has not been determined.

Extensive Dermatomyositis.—A case of dermatomyositis of two years' duration is reported by Davison in which there was marked involvement of all the muscles, especially of the sternocleidomastoid, with a sore throat leading to a tonsillectomy, followed by pulmonary abscess and finally death. Necropsy revealed the typical and classic lesions found in cases of dermatomyositis, with a coexisting status lymphaticus.

Use of Liquid Oxygen in Dermatology.—A review of the literature indicates that nearly all who have used liquid oxygen agree that it is invaluable but not practical on account of the difficulty of obtaining it. Liquid oxygen is now made commercially in one or more plants in many cities of the country. It can be transported and will keep for a number of days in a metal Dewar flask. The cost is about $1.50 a liter. Irvine and Turnacliff assert that it offers a practically sure, quick and painless method for the removal of all types of warts, including the plantar type. It can be used more quickly and less painfully than the electric needle in the removal of pigmented, hairy and papillomatous nevi. This makes it of special value in working with children. It is equally efficient, easier handled and less painful in the treatment of vascular nevi than is carbon dioxide snow. It is to be considered of value as a destructive agent in treating seborrhoic keratoses, lupus vulgaris, tuberculosis of the skin and small epitheliomas. The cosmetic results following its use as a destructive agent are excellent.

Archives of Surgery, Chicago

18: 607-768 (Feb.) 1929

*Viability of Transplanted Bone. W. E. Pollock, P. W. McKenney and F. E. Blaisdell, San Francisco.—p. 607.
*Subastragalar Arthrodesis. W. R. MacAusland, Boston.—p. 624.
*Allergy as Factor in Production of Proliferative Arthritis. J. A. Freiberg, Cincinnati.—p. 645.
*Impairment of Circulation in Varicose Extremity. G. De Takáts, H. Quint, B. I. Tillotson and P. J. Crittenden, Chicago.—p. 671.
*Operation for Cure of Tic Douloureux: Partial Section of Sensory Root at Pons. W. E. Dandy, Baltimore.—p. 687.
Exophthalmic Goiter: Indications for Stage Operation. J. DeJ. Pemberton, Rochester, Minn.—p. 735.
Pneumococcic Peritonitis: Six Cases. D. C. Elkin, Atlanta, Ga.—p. 745.
*Occurrence of B. Welchii in Experimental High Intestinal Obstruction. S. J. Stabins and J. A. Kennedy, Rochester, N. Y.—p. 753.

Viability of Transplanted Bone.—In three groups of experiments made by Pollock et al., segments of ribs, fractured longitudinally, were transplanted to the muscles of the back, knee joint and abdominal cavity of dogs: First, living fractured segments were transplanted for controls; second, the transplants were killed by boiling; third, the fractured living transplants were enclosed in an onion or collodion membrane in an effort to prevent the ingrowth of cells and blood vessels from the tissues of the animal and at the same time to permit the dialysis of nourishment necessary for the life processes in the bone itself. It was found that new bone formation in rib transplants occurs only in segments transplanted alive and only when the transplant itself becomes surrounded by well vascularized fibrous tissue. Death of the transplant invariably occurs when a membrane prevents the ingrowth of fibrous tissue and blood vessels, and is frequent under the most favorable conditions. In cases in which new bone formation occurs, the lacunae of the transplant, at least about the peripheral areas, contain darkly staining nuclei, and osteoblasts are present in fairly large numbers. Absorption of the bone begins immediately.

Subastragalar Arthrodesis.—The prevailing opinion that arthrodesis is inadvisable before the age of 16 years, MacAusland says, is undoubtedly due to the fact that many failures have resulted from attempts to perform arthrodesis in younger children. It is probable, however, that true bony ankylosis was not obtained because the operative technic did not allow sufficient exposure and did not provide for the removal of enough cartilage. When the author's method is used, these difficulties are not encountered, for it assures bony union by bringing the freshened bone surfaces into perfect apposition and contact. It also eliminates any danger of the parts slipping while a plaster cast is being applied. If this technic is used, arthrodesis may be done before the patient has reached the age of 16 years, but it cannot be carried out with assurance of success in patients below 12 years of age. The method allows displacement of the foot backward to any degree desired. At the same time, it ensures stabilization by producing ankylosis of the calcaneoastragalar joint and the midtarsal joints. The technic is simple and affords a good surgical exposure. Deformity may be corrected at the time that the arthrodesis is being done. Talipes varus or talipes valgus may be overcome by planning the angle at which the section of bone is removed from the lower part of the body of the astragalus. Cavus, which often cannot be corrected in the presence of paralysis of the gastrocnemius muscle, may be overcome when stabilization is done. In eight cases cited satisfactory results were obtained. In five cases, a subastragalar arthrodesis alone was performed. In the other three cases, a V-shaped wedge was removed from the midtarsal joint in conjunction with the subastragalar arthrodesis.

Allergy as Factor in Production of Proliferative Arthritis.—An experimental arthritis simulating the proliferative arthritis of man was produced by Freiberg in rabbits by the repeated injection of a bacterial extract. This experimental arthritis appears to be a local allergic manifestation of a generalized state of allergy to a specific bacterium or bacterial extract. The dysentery arthritides, and the exacerbations of chronic arthritides accompanying vaccine therapy, suggest that proliferative arthritis in man is also a local allergic manifestation of a bacterial infection. That the site of infection in arthritis may be in the intestinal tract is indicated by a study of cases and by experimental data.

Impairment of Circulation in Varicose Extremity.—The venous pressure in cases of varicose veins was measured by De Takáts et al. with a sodium citrate manometer. The influence of posture, of elastic support and of saphenous ligation on venous pressure was studied. The great increase of hydrostatic pressure in the presence of valvular insufficiency, together with a test for the patency of deep veins, is emphasized. Besides the postural influence, constricting garters and belts and respiratory movements have a demonstrable effect on venous pressure. Direct determinations with the manometer check fairly closely with the indirect method described by Eyster. The carbon dioxide content of the varicose blood is definitely higher than that of the venous blood in the cubital vein of the same person. The reverse is true of the oxygen content. This local anoxemia and acidosis are marked in some cases and explain the nutritional disturbances in tissues, the veins of which are varicose. The varicose eczema and the periosteal thickening are the results of venous congestion. The slow healing of injuries of the skin and the persistence of varicose ulcers may be thus readily explained. The increase in venous pressure, the poor nutritional state of the endothelial lining of minute vessels due to the anoxemia and a secondary lymphatic block are jointly responsible for the edema seen in the varicose extremity. The adequacy of arterial circulation was tested by the response of skin vessels to histamine. The importance of early recognition of partial arterial occlusion is self-evident. Therapeutic efforts should aim at a decrease or abolition of the increased venous pressure. Radical excision of the affected segments or obliteration by injection treatment will accomplish this result. Edema of long standing, however, is resistant to treatment, possibly because of irreversible injury to the endothelial lining of the minute vessels and lymphatic block. It is pointed out that patients with dilated veins may have an involvement of the arterial flow. The recognition of the latter is of great assistance in the therapy and prognosis of the condition.

Operation for Cure of Tic Douloureux.—Partial section of the sensory root at the pons by the subsellar route was performed successfully by Dandy in a considerable number of cases and was followed by relief from pain. The advantages of such partial section are as follows: 1. Immediate postoperative corneal disturbances are uniformly absent. 2. The motor root is always preserved. 3. Sensation, approaching the normal, is retained over the entire domain of the trigeminus, irrespective of the branch involved in the pain. 4. The corneal reflex is usually preserved. 5. The approach is bloodless after the dura has been exposed. 6. The operation is much easier and quicker to perform. The operation is, in effect, essentially that

of a cordotomy, in that only pain fibers are sacrificed and all forms of sensation are retained. Observations described by Dandy deny the hypothesis that the peripheral branches of the trigeminus are accurately represented by subdivisions of the sensory root. Some postoperative sensory observations suggest that there are separate nerve fibers for various types of sensation. Pain fibers appear to travel separately and to be located exclusively in the posterior part of the sensory root (in cross-section). Even when the sensory root is totally divided, varying degrees of sensation are retained in the face. At times, this sensation approaches the normal. This is due to the fact that accessory sensory branches usually accompany the motor root and later join the sensory root. When the accessory branches are absent, anesthesia of the face is complete. The accessory branches of the sensory root apparently never contain pain fibers, nor are pain fibers brought to them by anastomoses with the fibers of the sensory root. The motor root is always preserved because it is at a safe distance from the sensory root. Bilateral tic douloureux can be cured at a single operation by this method because the motor roots are not injured. Occasionally, tumors in the cerebellopontile angle cause tic douloureux. By this approach, they will be disclosed. The chances of a successful removal are enhanced because the tumor is found earlier. When malignant tumors invade the gasserian ganglion, relief cannot be obtained by dividing the sensory root by the temporal route. The cerebellar route is indispensable in such cases.

Bacillus Welchii in Experimental High Intestinal Obstruction.—*Bacillus welchii* has been recovered by Stabins and Kennedy in 17 per cent of a series of cases in the jejunum 10 inches distal to the ligament of Treitz. Under abnormal conditions produced by obstruction of the bowel at this level, and while awaiting the development of toxic symptoms, the organism has been recovered in 94 per cent of cases.

Iowa State M. Society Journal, Des Moines

19: 41-84 (Feb.) 1929

Looking Backward and Forward in Medical Education. W. J. Mayo, Rochester, Minn.—p. 41.
Orthotic Albuminuria. F. Carroll, Cedar Rapids.—p. 46.
Vincent's Angina. P. F. Stookey, Kansas City, Mo.—p. 49.
Clinic. W. T. Coughlin, St. Louis.—p. 54.
Bronchial Asthma: Nasal Conditions. S. W. Barnett, Cedar Falls.—p. 57.
Acute Appendicitis Complicating Pregnancy. W. L. Downing, Le Mars. —p. 59.
Pregnancy Complicating Hyperthyroidism: Case. T. E. Davidson, Mason City.—p. 64.

Journal of Laboratory and Clin. Medicine, St. Louis

14: 291-391 (Jan.) 1929

Morphine Medication as Method of Delaying Asphyxiation. F. P. Chillingworth and A. Canzanelli, Boston.—p. 291.
Attitude of Progressive Physician Toward Necropsies. R. G. Mills, Rochester, Minn.—p. 299.
Effect of Storage on Chemical and Antiseptic Properties of Silver Protein Solutions. H. Wales and C. M. Brewer, Washington, D. C.—p. 306.
Failure of Pituitary Substances to Influence Basal Metabolism or Specific Dynamic Response to Food in Normal Subject. M. E. Missal and M. W. Johnston, Ann Arbor, Mich.—p. 314.
Osmotic Pressure and Hydrogen Ion Concentration of Gentian Violet and Acriflavine Solutions with Reference to Stability and Therapeutic Value. S. C. Vandecaveye, Pullman, Wash.—p. 322.
Increasing Weight with Insulin: Preliminary Report. J. J. Short, New York.—p. 330.
Adaptation of Standard Antigens to Precipitin Test for Syphilis, with Comparative Results Shown by 3,000 Serums. H. W. Butler, New Orleans.—p. 336.
Constitution of Neoarsphenamine: New Structural Formula. B. Salkin, New York.—p. 342.
Hemo-Agglutination: III. In Blood of Chickens. W. M. Karshner, Seattle.—p. 346.
Toxicologic Chemistry: III. Reactions of Phenols and Phenolic or Opium Alkaloids with Marquis' Reagent, Nitric-Acid-Formaldehyde Reagents, and Erdmann's Reagent. V. E. Levine and C. C. Fulton, Omaha.—p. 350.
New Method for Recording Minute Fluctuations of Fluids in Capillary Tubes Without Floater. M. Muschat, Philadelphia.—p. 364.
Apparatus for Automatically Eliciting and Recording Achilles Jerk. W. W. Tuttle, Iowa City.—p. 368.
Standardization of Antigen for Use in Complement Fixation Test for Syphilis. A. Schaible, Albany, N. Y.—p. 370.
Comparison of Results of Meinicke, Kahn and Wassermann Reactions. H. A. Austin and M. M. Frey, Rochester, N. Y.—p. 372.
Rapid Stain for Direct Microscopic Examination of Milk. N. M. Erb, Baltimore.—p. 377.
Wilbite Stain for Negri Bodies. S. W. Bohls, Austin, Texas.—p. 379.

Journal of Nervous & Mental Dis., New York

69: 121-240 (Feb.) 1929

*Rôle Played by Cerebral Capillaries in Pathogenesis of General Paralysis. W. Malamud and K. Lowenberg, Foxborough, Mass.—p. 121.
*Progressive Facial Hemiatrophy. H. G. Wolff, Boston.—p. 140.
Tumors of Region of Third Ventricle: Diagnosis and Relation to Pathologic Sleep. J. F. Fulton and P. Bailey.—p. 145. (To be con't.)
Oculogyric Crises as Compulsion Phenomena in Postencephalitis: Occurrence, Phenomenology and Meaning. S. E. Jelliffe, New York.—p. 165.

Cerebral Capillaries in Pathogenesis of Paresis.—In the six cases studied by Malamud and Lowenberg there seemed to be a very definite parallelism between the type and localization of the capillary involvement and that of the tissues they supply. This would suggest that in the pathogenesis of paresis, the cortical capillaries serve as a bridge through which the process crosses into the parenchyma. A possible mechanism underlying this relationship is suggested by studies of the blood-cerebrospinal fluid barrier in paresis (and other organic conditions) and its fluctuations in malarial treatment.

Progressive Facial Hemiatrophy.—Wolff reports a case of progressive facial hemiatrophy associated with epilepsy and anisocoria. A nurse, aged 37, complained of convulsions, occurring chiefly at night for a year and a half, of a progressive loss of substance of the right side of the face for the past eleven years, and of generalized, periodic aching sensations of about two years' duration. At the age of 25, the patient had been in the training school. During the first six months of her course she was assigned to night duty in an active infectious disease ward. After a month she complained of severe headache, chiefly frontal. This lasted for several weeks and was accompanied by coryza. There was a period of loss of sleep and lack of mental acuteness. She consulted a physician, who thought that she had sinus disease and had several roentgenograms taken. These were said to be normal. The headaches gradually passed away; she gained weight rather rapidly, and four months after the described illness she weighed 184 pounds (83.5 Kg.). Her weight before had been 148 pounds (67 Kg.). Her average weight one year later was 168 pounds (76 Kg.), while her average weight now is about 150 pounds (68 Kg.). Twelve years ago as the result of an ether explosion, she burned her right hand. The next day she noticed that the right side of her face was blanched. About six months later a photographer called her attention to a facial asymmetry, the right side being smaller than the left. During the next ten years the facial atrophy gradually became more and more evident. About a year and a half ago she developed occasional enuresis. Several times she found herself on the floor on awakening. One year ago she shrieked out during the night, and was seen by her roommate to have a severe general convulsion. Since then she had had them repeatedly, at fortnightly intervals. They were always nocturnal, occurring chiefly between 4 and 5 in the morning. For a week afterward her taste was disturbed; all foods lost their flavor and tasted "brassy." Between these nocturnal seizures she had occasional floating sensations during the day. Apart from the seizures the patient had developed various symptoms. Her hands and feet had gradually grown slightly larger. She had chronic constipation, poor digestion (belching and distress after meals), and cold hands and feet. She complained of a peculiar sensation over the right side of her face as a "deep itching" which could not be appeased by scratching or rubbing. There is no history of excessive water drinking or sugar eating, and no growth disturbance other than those mentioned.

Kentucky Medical Journal, Bowling Green

27: 49-90 (Feb.) 1929

Hernia. J. D. Hancock, Louisville.—p. 51.
Diseases of Rectum and Colon and Relation to Remote Disorders. W. E. Applehans, Louisville.—p. 54.
Auricular Fibrillation Treated with Quinidine: Case. J. R. Morrison, Louisville.—p. 61.
Endocrinopathies: Clinical Report. R. A. Bate, Louisville.—p. 63.
Nasal Sinus Symptoms, Actual and Contributory Causes, and Symptoms. W. Bledsoe, Covington.—p. 66.
Prevention and Treatment of Tuberculosis. G. Purdy, New Liberty. —p. 71.
Chronic Intermittent Purpura: Case. A. E. Cohen, Louisville.—p. 74.
Penetrating Wounds of Abdomen: Sixty-Nine Cases. A. M. McKeithen, Louisville.—p. 77.
Recurrent Abscess of Liver: Case. R. R. Elmore, Louisville.—p. 82.
Esophageal Diverticulum: Case. L. W. Frank, Louisville.—p. 85.

Laryngoscope, St. Louis

39: 1-74 (Jan.) 1929

Etiology and Etiologic Treatment with Bismuth of "Plaut Vincent's Angina." P. Mangabeira-Albernaz, Campinas, Brazil.—p. 1.
Tumors, Benign and Malignant, of Tonsil and Peritonsillar Area. L. S. Dunn, Philadelphia.—p. 16.
Latent Disease of Maxillary Sinus. W. Mithoefer, Cincinnati.—p. 29.
Vascular Changes in Chronic Progressive Deafness. E. M. Josephson, New York.—p. 40.
Prevention of Nasal Deformities Following Submucous Resection of Nasal Septum. W. W. Carter, New York.—p. 52.

Maine M. Assoc. Journal, Portland

20: 1-17 (Jan.) 1929

Sterility in Male. M. B. Sanders, Boston.—p. 1.
Sterility in Female from Endocrine Standpoint. C. H. Lawrence, Boston. —p. 8.

Michigan State M. Society Journal, Grand Rapids

28: 85-210 (Feb.) 1929

Hyperthyroidism. A. F. Jennings, Detroit.—p. 85.
Endocrine Disturbances of Emotional Origin. C. D. Camp, Ann Arbor. —p. 92.
Endocrinology as Branch of Internal Medicine. C. J. Marinus, Detroit. —p. 94.
Doctor's Log. W. J. Stapleton, Jr., Detroit.—p. 102.
Multiple Neuritis Due to Focal Infection. C. Corley, Jackson.—p. 107.
*Causes of Mortality in Appendicitis. C. D. Brooks, Detroit.—p. 112.
Electrocardiograms: Clinical Significance. J. L. Chester, Detroit.—p. 114.
*Partial Heart Block in Upper Respiratory Infection. L. T. Colvin, Detroit.—p. 121.
Treatment of Lobar Pneumonia. H. H. Riecker, Ann Arbor.—p. 125.
*Hypothyroidism Without Myxedema: Recognition and Treatment. R. M. McKean, Detroit.—p. 128.
Tularemia: Case. A. M. Shaeffer, Jackson.—p. 131.

Causes of Mortality in Appendicitis.—It is Brook's opinion that one of the most dangerous general treatments is the promiscuous use of the ice bag when patients develop a pain in the side or suspected appendicitis. It is not uncommon for patients to prescribe an ice bag for themselves when they have an acute attack of abdominal pain in the right side, before consulting a physician, because they have heard of some one who has had appendicitis cured by the ice bag. Often when a physician makes a diagnosis, the patient wishes to make a further trial of the ice bag rather than to submit to operation, even when advised regarding the seriousness of delay. Just what good the ice bag accomplishes in acute appendicitis Brooks says he has never been able to understand. It masks the symptoms and is much more dangerous than a full dose of morphine given in a well marked attack. After an ice bag is applied for a few hours, the examining clinician can get very little idea of the rigidity or muscle spasm present. When an ice bag has been used ten or twelve hours or more this muscle spasm and rigidity is absent entirely as far as the palpating hand can discern, and then one must depend only on the history of the case, the onset, the character of the pain, vomiting, nausea, and fever and the blood count, and these later symptoms may be misleading or absent, as the most important early symptoms are those of muscle spasm.

Partial Heart Block in Upper Respiratory Infection.—In four patients with previously normal hearts, Colvin has seen partial heart block and other evidence of toxic myocarditis associated with acute upper respiratory infections, apparently not attacks of acute rheumatic fever. The cardiac involvement was in every case temporary. In all four cases prostration was a symptom more marked than would ordinarily be expected. The need of watching patients with upper respiratory infections for the development of signs of cardiac injury is pointed out.

Recognition and Treatment of Hypothyroidism Without Myxedema.—McKean discusses a type of case approaching in signs, symptoms and laboratory observations true myxedema, but differing from the latter principally in the absolute absence of the characteristic nonpitting edema that marks that condition. In a series of 2,000 cases reviewed, fifty examples have been found, and these form the basis for this paper. The chief presenting symptom in most cases of this series was a distinctive mental and physical fatigue—a pronounced inertia—marked usually by its morning peak, with an increasing energy curve as the day wore on, until evening found the patient, as it were, "on the crest." Associated with this fatigue in a substantial number of cases were one or a number of the following symptoms: sluggish memory, inability to concentrate, dull headaches, constipation, dyspnea on mild exertion, moderate indigestion, myalgias or arthralgias, disturbed menstruation, which was usually scanty, and occasionally mild impairments in the special senses, and a loss of libido. Common to the group and usually suggesting the lowered level of heat production were dry skin, susceptibility to falls in temperature, numbness or chilliness of the hands and feet, low buccal temperature, slow pulse rate and low blood pressure. Physically, other changes in the integumenta were not uncommon, notably hair loss, an increasing tendency to dental caries, skin manifestations such as eczema and urticaria, and an increasing adiposity with definite predilection for the supraclavicular and upper dorsal areas and the upper arm and legs. From the laboratory side, a secondary anemia, mild leukopenia and relative mononucleosis were not unusual, associated, of course, with the one finding common to the entire group—namely, a definite and repeated basal metabolic rate determination below the proscribed normal limits. Physical examination in every case failed to reveal other pathologic changes which were capable of explaining the presenting conditions, and McKean feels justified in considering these individuals as suffering from a hypothyroid disturbance and subjecting them to closely scrutinized thyroid therapy.

Pennsylvania Medical Journal, Harrisburg

32: 307-384 (Feb.) 1929

Early Diagnosis and Treatment of Laryngeal Cancer. J. E. MacKenty, New York.—p. 307.
Symptomatology of Measles. F. T. O'Donnell, Wilkes-Barre.—p. 309.
Diagnosis and Medical Treatment of Measles. H. B. Kern, Slatington. —p. 312.
Serum Therapy of Measles. D. E. Berney, Scranton.—p. 315.
Treatment of Acne. H. G. Wertheimer, Pittsburgh.—p. 320.
Treatment of Psoriasis. S. S. Greenbaum, Philadelphia.—p. 321.
Treatment of Urticaria. G. J. Busman, Pittsburgh.—p. 325.
Clinical Syndromes Associated with Hypofunction of Thyroid Gland. B. A. Cohoe, Pittsburgh.—p. 328.
Clinical Manifestations of Ovarian Dysfunction. S. A. Chalfant, Pittsburgh.—p. 332.
Pituitary Headache. L. D. Sargent, Washington.—p. 333.
Carcinoma of Cecum: Case. H. A. Dunn, Erie.—p. 335.
Congenital Atresia of Esophagus with Absence of Midportion: Case. W. P. Walker, Bethlehem.—p. 336.
Gunshot Wound of Brain: Case. J. H. Baldwin, Philadelphia.—p. 336.
Acute Empyema with Postpneumonic Pulmonary Atelectasis Relieved by Bronchoscopy: Case. E. F. Butler, Sayre.—p. 337.

Philippine Islands M. Assoc. J., Manila

8: 509-552 (Dec.) 1928

Philippine Islands Medical Association: Its Opportunities for Service. A. S. Fernando.—p. 509.
Hydro-Appendix. C. D. Franco.—p. 515.
Chronic Osteomyelitis Complicating Diabetes, Cured by Orr Method. J. Santillan.—p. 520.
Phytopharmacologic and Photopharmacologic Studies on Leprosy Blood Serum. D. I. Macht.—p. 523.

Physical Therapeutics, Baltimore

46: 567-633 (Dec.) 1928

Physics and Biology of Long Wavelength Roentgen Rays. C. Lerner, New York.—p. 567.
Roentgen Dosage. J. D. Morgan, Philadelphia.—p. 577.
Superiority of Electrosurgery for Destruction of Pathologic Tissues. E. N. Kime, Indianapolis.—p. 582.
Electrosurgery. E. H. Trowbridge, Worcester, Mass.—p. 585.
Management of Endocervicitis by Physical Energies. A. D. Willmoth, Louisville, Ky.—p. 600.

U. S. Veterans' Bureau M. Bull., Washington, D. C.

5: 87-160 (Feb.) 1929

Value and Importance of History Taking and General Physical Examination with Case Illustrations. E. T. Gallagher and H. Freed.—p. 97.
Far Advanced Pulmonary Tuberculosis. C. F. Ensign.—p. 102.
Annular Shadows: Are They Cavities or Spontaneous Pneumothoraces? W. A. Monnich.—p. 107.
Azygos Lobe of Lung. V. L. Minehart.—p. 112.
Diagnosis of Bronchiectasis. R. C. Buck.—p. 114.
Differential Diagnosis of Gastric and Duodenal Ulcer. O. Edwards. —p. 116.
Manic Praecoxes. W. G. Richter.—p. 118.
Treatment of Nondiabetic Acidosis with Glucose and Insulin. H. B. Henry.—p. 122.
Dental Conditions and Treatment Associated with Encephalitis. J. B. Eastman.—p. 125.
Ureteral Calculus: Case. C. D. Allen.—p. 127.
Nephrolithiasis: Case. J. Christiansen.—p. 129.
Repeated Perforations of Peptic Ulcers with Recovery. J. A. Thurston. —p. 131.
Cheilitis Exfoliativa. G. W. Twomey.—p. 134.
Therapeutic Benefits of Supervised Physical Exercise for Psychotic Patients. E. C. Kennedy.—p. 145.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British J. Experimental Pathology, London

10: 1-108 (Feb.) 1929

*Gastric Secretion; Relationship to Urinary Reaction. D. T. Davies. —p. 1.
*Blood Phosphorus in Health and Disease: IV. Phosphorus Content of Blood in Diabetes Mellitus. F. B. Byrom.—p. 10.
Fowl Pox Antiserum. T. Dalling, J. H. Mason and W. S. Gordon.—p. 16.
*Glycolytic Action of Some Tumors and Effect of Insulin. S. L. Baker, F. Dickens and E. J. Gallimore.—p. 19.
Effect of Heat on O and H Immune Bodies. A. Felix and L. Olitzki. —p. 26.
Cultivation of Vaccinia Virus. G. H. Eagles and D. McClean.—p. 35.
Quantitative Study of Effect of Ultraviolet Rays on Bacteriophage. S. L. Baker and S. H. Nanavutty.—p. 45.
Simple Microcataphoresis Cell. H. C. Brown and J. C. Broom.—p. 61.
Simple Method for Determining Electric Charge Carried by Virus Particles. S. P. Bedson and J. O. W. Bland.—p. 67.
Exhaustion of the Medium in Bacterial Culture. J. C. Broom.—p. 71.
Titration of Scarlet Fever Antitoxin. R. A. O'Brien, C. C. Okell and H. J. Parish.—p. 83.
Distribution of Virus and Neutralizing Antibodies in Blood and Pathologic Exudates of Rabbits Infected with Vaccinia. W. Smith.—p. 93.

Relationship of Gastric Secretion to Urinary Reaction.—Evidence is brought forward by Davies to show that the urinary changes may possibly afford additional information in the diagnosis of certain gastric disorders. In cases of true achlorhydria the reaction of the urine was found to be remarkably constant; hence it may afford an additional means of diagnosis in conditions in which achlorhydria is the rule. It also affords a method for distinguishing between true and false achlorhydria that is less fatiguing than the estimation of the total and mineral chlorides of the gastric secretion. An acid tide may be obtained in cases in which there is rapid evacuation of stomach contents and early stimulation of alkaline pancreatic juices.

Phosphorus Content of Blood in Diabetes Mellitus.—The phosphorus partition of the blood was studied by Byrom in forty cases of diabetes mellitus, together with a few cases of nondiabetic hyperglycemia, hemochromatosis and acromegaly diabetes. The fall in the ester phosphorus content of the corpuscles is the most striking result of the investigation. In diabetic coma the corpuscle contains less than one-half the normal amount, while in severe uncomplicated diabetes there is a similar, but less extreme deficit. Effective insulin treatment restores the ester content of the corpuscles to normal. Such a depletion of ester phosphorus has not been found in any other disease studied. In a series of about 150 analyses of blood obtained from various pathologic and normal subjects, an index of below 48 has not been encountered in any instance; yet of eleven cases of severe untreated diabetes only two showed an index above this value, while in coma the index readings fall as low as 28 and 24. In the cases analyzed the fall in the ester phosphorus was greatest in those cases in which acidosis, as judged by gross ketonuria and symptoms of coma, was most marked, while in mild diabetes, without ketosis, there was no such change. It may be assumed that the low ester phosphorus content of the corpuscle in severe untreated diabetes is probably the direct result of acidosis. In fatal diabetic coma the inorganic phosphate rises considerably, probably as the result of renal injury. The conclusions of Bloor with regard to the lipin content of the blood in this disease are confirmed. There is an increase in the plasma lipin phosphorus in many cases of severe diabetes, the amount of lipin in the corpuscles remaining, as in nephritis, relatively normal. At the same time fatal coma may occur in the absence of any marked increase in the blood lipin, while on the other hand high readings are occasionally encountered in quite mild cases of diabetes. Bloor remarked on the rarity of naked-eye lipemia in diabetes; in the present series of about forty cases no instance of milkiness of the plasma was seen, even when the lipin exceeded double the normal value. The lipin phosphorus in diabetes differs in its reaction to treatment. Whereas the inorganic and the ester phosphorus are restored to normal after treatment, the lipin frequently remains unchanged or is even increased. This is possibly due to the fact that the average diet in diabetes usually includes appreciably more fat than the diet of the normal individual or the untreated diabetic patient.

Glycolytic Action of Some Tumors and Effect of Insulin.—In agreement with the work of Warburg, the experiments made by Baker et al. have shown a marked difference between certain normal tissues and malignant tumors as regards the anaerobic metabolism of dextrose. The tumor tissues were found to produce from five to ten times as much lactic acid as was produced by normal tissues under the same conditions. The amount of lactic acid produced was nearly equal to the amount of dextrose destroyed. The addition of either insulin or thyroxin did not have any demonstrable effect on the dextrose metabolism.

British Medical Journal, London

1: 185-232 (Feb. 2) 1929

*Underlying Disturbances of Metabolism of Nervous Child. H. C. Cameron.—p. 185.
Diagnosis of Cancer of Colon. C. J. MacAuley.—p. 187.
*State of Artery and Circulation Under Sphygmomanometer Cuff During Compression. H. Sainsbury.—p. 191.
*Ileocecal Volvulus from Adhesions Formed by Left-Sided Pelvic Appendicitis. W. A. Cochrane.—p. 193.
Treatment of Tuberculosis of Lungs by "Sanocrysin." W. Stobie and S. Hunter.—p. 194.
*Diabetes Mellitus with Low Renal Threshold. R. D. Lawrence.—p. 196.
Vomiting in Infancy. T. M. Ling.—p. 197.
*Oxidase Reaction in Laboratory Diagnosis of Gonorrhea. I. N. O. Price.—p. 199.
Epithelioma of Skin in Female Cotton Operative. A. H. Southam and P. B. Mumford.—p. 200.
Idiosyncrasy to Quinine Injections. G. B. D. Gray.—p. 200.
*Transmissibility of Pyorrhea Alveolaris. J. Whittingdale.—p. 200.
*Metastases in Mammary Carcinoma. F. T. Ingram.—p. 201.

Underlying Disturbances of Metabolism of Nervous Child.—Cameron feels that not only the peculiar liability of the nervous child to derangements of metabolism, especially to that common condition known as acidosis, is a direct result of his undue sensitiveness to emotional excitement or to physical fatigue, but also that the state of disordered metabolism so produced is of itself provocative of restlessness, irritability or nervousness. The nervous child is prone to acidosis, but whenever the symptoms of acidosis are recognizable there is apt to be a simultaneous exacerbation of all the symptoms of nervousness. In the pale, exhausted, irritable and nervous child suffering from, or about to suffer from, a "bout" or "attack," with or without vomiting, biochemical examination shows as a rule a blood sugar at a low level, if not a definite hypoglycemia, ketonemia and a diminution of the alkali reserve of the blood. Therapy based on these biochemical observations should include a reduction of the intake of fat to within the limits of the tolerance of the individual child, a freer intake of easily absorbed carbohydrate, and the provision of a daily depot of alkali. The omission of cream and cod liver oil, the removal from a very rich milk of some part of the cream, and the restriction of the intake of eggs and butter to perhaps three eggs and one-fourth pound of butter a week may be necessary in households in which the provision of milk, cream, butter and eggs in large amounts has been considered the first essential for health and strength. Chocolate contains a high proportion of a fat which these children appear to tolerate especially badly, and should be omitted, as should all forms of sweets which are rich in fat. Meat, fish, green vegetables and fruit may be given as usual. All cereal foods, wholemeal bread, rusks, oatcake, wheatmeal biscuits, sugar, jams, jelly, honey and golden syrup may be given more freely than usual. Suet pudding consists of so much flour and of so little suet that it is permissible. A reasonable amount of barley sugar, maple sugar, sugar candy or boiled sweets may be given daily at meal times. The prescription of dextrose in the form of a drink flavored with fruit juice has been of real service. Dextrose has several advantages over cane sugar as a means of replenishing the carbohydrate reserves. It is only about half as sweet as cane sugar; it is absorbed rapidly into the blood stream from the upper alimentary tract, and it has not the same tendency to cause a fermentative diarrhea. Its use, too, seems likely to be followed by the appearance of urticaria, a troublesome result in some children of the free administration of cane sugar. Given between meals it does not disturb appetite, and has something of the effect of a glass of wine in the resulting improvement in color and in a sense of well being. A small dose of alkali daily is often helpful. It is common to advise the intake daily of a teaspoonful of sodium bicarbonate.

If, as is often the case, there is constipation, a little carbonated alkaline water or other laxative saline may be added to the morning dose of dextrose. By dietetic regulation along these lines, and by the free administration of dextrose and of a small amount of alkali, good results can sometimes be achieved. Almost always the more direct symptoms of the acidosis, the tendency to bouts or attacks of vomiting or diarrhea or of pyrexia, are manifestly controlled. When no such fortunate result occurs and symptoms continue unabated, the explanation lies sometimes in the presence of focal infection, sometimes in persistent failure of the management. Encouragement, rest, freedom from infection, and a high intake of sugar seem the special needs of the nervous child.

State of Artery and Circulation Under Sphygmomanometer Cuff During Compression.—It is generally assumed that the lumen of the brachial artery is completely obliterated when, in the course of a blood pressure estimation, the pulse at the wrist ceases to be palpable. Sainsbury discusses the mechanics of the circulation and propounds a new theory for the obliteration of the pulse. He asserts that the extravascular pressure, caused by the squeeze of the ball, eventually meets and cancels the expanding force value of the pulse wave; the arterial wall will thus be prevented from yielding and the wave cannot pass, though the channels are all open. This is the reasoned explanation now proffered to show that it is not necessary to invoke obliteration of the artery to account for the extinction of the pulse at the wrist in the process of taking the blood pressure. Therefore, on physical grounds, the obliteration hypothesis is held to be untenable.

Ileocecal Volvulus from Adhesions Formed by Left-Sided Pelvic Appendicitis.—Cochrane cites a case presumed to be one of acute intestinal obstruction. The abdomen was opened by a midline infra-umbilical incision. Coils of ileum, moderately distended, were packed off. The pelvic colon was empty. The cecum and appendix were not in the right iliac fossa. The ascending colon, longer and much more mobile than normal, being provided with a mesentery was traced into the pelvis. The cecum was lying in the true pelvis, distended and completely filling it. Attempts to extract it from the pelvis were resisted until adhesions binding down the appendix to the left side of the true pelvis had been divided. In delivering the incarcerated cecum, a volvulus of the ileocecal segment of the bowel was discovered. Rotation in a clockwise direction had taken place through more than half a circle, round the axis of the appendix, adherent to the left side of the pelvis. The bowel was viable. After correction of the volvulus, the appendix was removed and cecal plication performed. The patient made a good recovery.

Diabetes Mellitus with Low Renal Threshold.—Lawrence reports eight cases presenting typical symptoms of diabetes mellitus in all of which an abnormally high blood sugar had been found, either on ordinary diet or after a dextrose tolerance test. In three cases diet alone controlled the blood sugar; in five insulin was necessary. Five of the patients were males and three females, and their ages varied from 19 to 68. In two cases there was a family history of diabetes. The son, aged 14, of one of these patients had no symptoms of diabetes but on two occasions had shown an abnormally high blood sugar curve with slight delay in the return to normal. Unlike his father, this boy had a raised renal threshold and passed no sugar at a blood sugar concentration of 0.225 per cent. The level of the renal threshold was fairly closely observed in these cases, and was 0.15, 0.14, 0.11, 0.1, 0.1, 0.09, 0.09 and 0.08 per cent, respectively. The last few patients were hardly ever free from traces of sugar in the urine. The amount of glycosuria was in every case related to the level of the blood sugar, and the more the latter exceeded the threshold, the more sugar appeared in the urine. This is contrary to what is usually said to occur in renal glycosuria in nondiabetic persons, in whom the amount of glycosuria is said to be usually constant and independent of diet and the level of the blood sugar. In two of these diabetic patients the lowered threshold has remained constant for five years, and in none, observed over shorter periods, has it been found to vary. There is every reason to think, therefore, that the peculiarity is a permanent one, as renal glycosuria seems to be.

Oxidase Reaction in Laboratory Diagnosis of Gonorrhea.—The value of this method in the routine examination for the presence of the gonococcus in cultures taken from the genital tract of patients who clinically had, or were suspected of having, gonorrhea was tested by Price. Two thousand cultures were examined, the first 250 of which were selected as a "trial run." These contained obvious colonies of gonococci, doubtful colonies, and cultures obviously not containing any gonococci. The following 1,750 were routine cultures sent into the laboratory for examination. Of these 117 (6.7 per cent) were positive, and all of these were morphologically gonococci. Other members of the neisserian group also gave positive reactions, but the only one likely to confuse the issue in a case of doubtful gonorrhea is *Micrococcus catarrhalis*, and its presence in the genital tract is rare. Pseudoreactions (2.2 per cent) were almost invariably given by one of the protean varieties of coliform bacilli. Among the mixed cultures which gave negative oxidase reactions (91.1 per cent) the gonococcus was not encountered, but on four occasions a very small gram-negative coccus was noted, which it was possible to isolate in a pure culture on only one occasion, and then with great difficulty. This organism appears to belong to the neisserian group in spite of its negative oxidase reaction. From these results it is evident that this method of diagnosis of the presence of colonies of gonococci in a culture tube tends to increase accuracy, particularly in culture in which the colonies of gonococci have grown feebly or have been almost smothered by the growth of such secondary organisms as *Bacillus coli* or staphylococci. A definite positive reaction removes the necessity of staining.

Transmissibility of Pyorrhea Alveolaris.—Whittingdale suggests that pyorrhea alveolaris is more often transmitted from person to person as a direct infection than has been generally realized. In a considerable proportion of cases it has been noted that the onset of pyorrhea in young persons has dated from their first love affair. He cites the case of a man, aged 35, with well marked pyorrhea affecting the lower incisors, who was married to a young woman whose mouth was perfectly clean, with coralline gums. Two months after marriage the wife came for treatment of headache, and on routine examination it was found that the gums were of a dull purplish hue and spongy. In spite of careful hygienic measures, the condition spread until the majority of the teeth in the lower jaw became loosened and easily movable. The condition showed signs of improvement only when circumstances led her to visit her mother for a period of six weeks; on her return to her home the gums were firmer and pink, and no longer exuded pus on pressure. Since then her husband has had his offending teeth extracted and the wife's cure persists.

Metastases in Mammary Carcinoma.—Ingram reports a case of scirrhous carcinoma of the breast with metastases to the nail fold of the left middle finger. Six months after its removal there was no sign of any recurrence in the breast, axilla or anywhere else. A few days later, however, the patient complained of severe headache round about what looked like a suppurating wen in the right parietal region. This turned out to be a hard, soiled and not very vascular mass, moving freely with the scalp, and certainly not a wen. Since then she has had almost continuous headache, with intermittent attacks of vomiting. Neither the thorax nor the abdomen shows any abnormality.

Tubercle, London

10: 205-256 (Feb.) 1929

*Sedimentation Test in Pulmonary Tuberculosis. H. A. Clegg.—p. 205.
Seasonal Variations in Body Weight in Pulmonary Tuberculosis. M. K. Pal.—p. 212.
Climate in Treatment of Pulmonary Tuberculosis. J. A. Miller.—p. 217.

Sedimentation Test in Pulmonary Tuberculosis.—Clegg has found that the sedimentation rate of red blood corpuscles in pulmonary tuberculosis is an accurate measure of the activity of a lesion, and of use in determining the diagnosis and prognosis. The lower the rate, the worse the prognosis. Patients with a rate between 8 and 9 showed slight but definite symptoms of activity, and responded well to rest and graduated exercise; in them the immediate prognosis was excellent. In patients with a rate ranging between 6 and 8, signs and symptoms of disease were more marked, but only one became progressively

worse, while the remainder responded to rest over varying periods of time, and were ultimately well enough to be transferred to sanatoriums. In this group the immediate prognosis can be said to be good. Patients with a rate ranging between 4.8 and 4.0 all became progressively worse, showing no response to treatment.

Annales de Médecine, Paris

25: 1-96 (Jan.) 1929

*Iodine Treatment of Exophthalmic Goiter. M. Labbé.—p. 5.
*Azotemia Caused by Lack of Sodium Chloride in Diet of Diabetic Patients. L. Blum, P. Grabar and van Caulaert.—p. 23.
Mechanism Involved in Azotemia Caused by Lack of Sodium Chloride in Diet. L. Blum, P. Grabar and van Caulaert.—p. 34.
*Rôle of Polypeptides in Uremia. A. Puech and P. Cristol.—p. 43.
Myocardial Connections of Sinuses, Auricles and Ventricles. E. Géraudel.—p. 70.
Hereditary Familial Craniofacial Dysostosis. O. Crouzon.—p. 84.

Iodine Treatment of Exophthalmic Goiter.—Labbé reports twenty-five cases of exophthalmic goiter (toxic forms included) which were treated with iodine preparations. He observed a rapid amelioration in the general condition of the patients (disappearance of agitation and of extreme emotivity); disappearance of tremor, of palpitations, of tachycardiac crises and of gastric disturbances; decrease of basal metabolism, and increase of weight; but the symptoms due to the disturbances of the sympathetic system, such as exophthalmos, and the volume of the goiter were not influenced. The treatment may be continued indefinitely, with the same good results, but it does not seem to cure the condition.

Azotemia Caused by Lack of Sodium Chloride in the Diet of Diabetic Patients.—Blum et al. observed azotemia in several patients with grave diabetes mellitus who had been put on a salt-free diet after the diabetic coma had been cured by insulin. The condition rapidly disappeared under the administration of salt. It was not due to acidosis, nephritis or anuria, but was caused by lack of salt in the diet of patients whose chloride reserve was exhausted during prolonged acidosis (before the coma). In cases of acute coma (acute acidosis), the salt-free diet after the insulin treatment did not cause azotemia, because the chloride reserve was not exhausted.

Rôle of Polypeptides in Uremia.—Puech and Cristol call attention to the significance of polypeptides in the prognosis of nephritis. They determined the amount of polypeptides in the blood serum of twenty-three patients with chronic nephritis: there was slight polypeptidemia in cases of latent chronic nephritis (anemia, loss of weight); it increased in direct relation to the gravity of the symptoms and rose to 0.300 in uremia; it decreased with the amelioration of the symptoms. Because the azotemia never showed such a regular decrease or increase in direct relation to the changes in the gravity of the disease, the authors think that the polypeptidemia is of greater importance in the prognosis of nephritis than is the azotemia.

Archives Franco-Belges de Chirurgie, Brussels

31: 89-168 (Feb.) 1928

Surgical Treatment of Pulmonary Suppurations. Guilleminet.—p. 89.
Bilateral Hydatid Cyst at Base of Lungs. H. L. Rocher and Guillermain.—p. 116.
Progress in Plastic Surgery. J. Eastman Sheehan.—p. 122.
Idem. Dufourmentel.—p. 126.
Surgical Treatment of Pouches Under Eyes. Bourguet.—p. 133.
*New Surgical Technic for Correction of Pendulous Breasts. Noel and Lopez-Martinez.—p. 138.
Surgical Treatment of Wrinkles of Face and Neck. Lagarde.—p. 154.

New Surgical Technic for Correction of Pendulous Breasts.—For correcting pendulous breasts Noel and Lopez-Martinez make crescentic excisions in the skin of the breasts immediately over and partially surrounding the areola. The resulting scar blends with the areola and is quite imperceptible. If the elongation of the breast is more than 10 cm., the operation is completed by similar small crescentic excisions under the areola. These small crescentic skin excisions, made under local anesthesia, are repeated as many times as is necessary for complete correction of the pendulousness. They never use this technic for breasts sagging more than 14 cm. In such cases they use the Lopez-Martinez technic of nipple transplantation.

Archives de Médecine des Enfants, Paris

32: 65-128 (Feb.) 1929

Streptococcus Empyema, Following Measles, Cured by Thoracocentesis. P. Nobécourt, M. L. Kaplan and Bargeton.—p. 65.
*Subcutaneous Injection of Oxygen in Children's Diseases. W. Mikulowski.—p. 73.
*Importance of Ovarian Insufficiency and Venous Hypertension in Pathogenesis of Acrocyanosis in Young Women. M. Villaret and F. Saint Girons.—p. 79.
Disturbances of Nervous System in Whooping Cough. M. Giuffré.—p. 82.
Tetanus in the New-Born, Cured with Antitetanic Serum. H. Grenet and C. Vogt.—p. 86.

Subcutaneous Injection of Oxygen in Children's Diseases.—Mikulowski emphasizes the good results of the subcutaneous injection of oxygen in children's diseases in which there is deficient oxygenation caused by circulatory or respiratory disturbances and in infectious diseases. He reports several cases of croup with pneumonia, of typhoid, and of carbon monoxide poisoning in which he observed a rapid amelioration of the cyanosis, restlessness and hypotonia after the subcutaneous administration of oxygen (about 100 cc. per dose). However, he used the oxygen as medication complementary to various other treatments appropriate to each particular disease.

Importance of Ovarian Insufficiency and of Venous Hypertension in the Pathogenesis of Acrocyanosis in Young Women.—Villaret and Saint Girons often observed acrocyanosis in young women with high venous pressure and symptoms of ovarian insufficiency. Ovarian opotherapy usually ameliorated the symptoms of ovarian insufficiency and diminished both the venous pressure and the acrocyanosis. Therefore the authors think that certain forms of acrocyanosis may be of endocrine origin, the ovarian insufficiency producing high venous pressure which, in turn, causes acrocyanosis.

Bulletins et Mém. de la Soc. Nat. de Chirurgie, Paris

55: 1-43 (Jan. 19) 1929. Partial Index

Three Cases of Torsion of Pedicle of Right Ovarian Cyst Mistaken for Appendicitis. Koutodina.—p. 11.
*Hematemesis in Cholelithiasis. P. Moulonguet.—p. 15.
Treatment of Trophic Ulcers by Periarterial Sympathectomy. Férey.—p. 20.
*Migration of Spike of Oat Grass (Trisetum Fravescens) Through Respiratory Organs. M. Larget and J. P. Lamare.—p. 26.
Splanchnic Anesthesia: Two Technics. Baquié and L. O. Zeno.—p. 28.
Arthrodesis of Hip Joint in Old Coxalgia. G. Michel and Mutel.—p. 31.
Traumatic Dislocation of Symphysis Pubis. Juvara.—p. 36.

Hematemesis in Cholelithiasis.—Moulonguet calls attention to the frequent occurrence of hematemesis and melena in the course of cholelithiasis, which may obscure the diagnosis. Their presence may be due to alteration of the blood and disturbances of blood coagulation; to a more or less extensive thrombosis in the portal venous system or to aneurysms of the hepatic vessels; to ulcerative duodenitis; to hemorrhages into the biliary tract, or even to cancer of the gallbladder, which is not an unusual complication of cholelithiasis. He recommends exploration of the gallbladder in all laparotomies done for hemorrhage of the digestive tract in which no corresponding lesions are found either in the stomach or in the duodenum.

Migration of a Spike of Oat Grass (Trisetum Fravescens) Through the Respiratory Organs.—Larget and Lamare report a case of prolonged migration of a spike of oat grass, 3.5 cm. long, inhaled by a child, aged 2 years. Immediately after the aspiration of the grass, the child had a severe attack of suffocation lasting twenty minutes, probably corresponding to the time of the migration of the grass through the larynx. For several weeks afterward signs of bronchitis were observed, corresponding probably to the migration of the spike of grass through the bronchi. Reaching the pulmonary parenchyma it caused a pulmonary abscess, with adhesions to the parietal pleura, and extension to the chest wall, through which it was eliminated.

Presse Médicale, Paris

37: 169-184 (Feb. 6) 1929

Arterial Hypertension Caused by Hypernephroma. H. Vaquez, E. Donzelot and E. Geraudel.—p. 169.
Roentgen Diagnosis of Small Bronchial Dilatations After Intratracheal Injection of Iodized Oil. Bonnamour and Badulle.—p. 173.
*Stimulating Effect of Thymus on Consolidation of Bone Fractures. K. Glaessner and J. Hass.—p. 176.

*New Operative Technic for Inguinal Hernioplasty. L. Bonnet.—p. 178.
Use of Tetiothalein Sodium in Roentgenography of Common Bile Duct. F. Jayle and P. Aimé.—p. 178.
*Late Results of Resection or Semilunar Cartilage. Tavernier and Chappoux.—p. 179.

Stimulating Effect of Thymus on Consolidation of Bone Fractures.—The experiments of Glaessner and Hass on cats showed that the consolidation of fractures was considerably more rapid in nonthymectomized cats than in thymectomized cats. The administration of thymus extract to the latter stimulated ossification of the callus, and in a higher degree than did the administration of extracts either of testicle or of parathyroids. Similar results were obtained in experiments on men (after osteotomy) and in the study of the effect of thymus extract in cases of delayed consolidation of bone fractures.

New Operative Technic for Inguinal Hernioplasty.—Bonnet gives a description of a new operative technic which he has used with excellent results in thirty patients. The outstanding feature of it is the creation of a double musculoaponeurotic plate in front of the spermatic cord by a special method of suturing the conjoined tendon to the lower lip of the incision in the aponeurosis of the external oblique and this one to the upper lip of the same aponeurosis, making it overlap the lower part of the aponeurosis and thus doubling the anterior wall of the newly formed inguinal canal.

Late Results of Resection of Semilunar Cartilages of Knee.—Because lesions of the semilunar cartilages of the knee occur frequently in football players, Tavernier and Chappoux deemed it interesting to make an inquiry as to the results of resection of one semilunar cartilage of the knee. Nineteen of the twenty-one men operated on played football as well after the operation as before. One of the two others had a secondary fracture of the patella and consecutive atrophy of the quadriceps muscle. The other had a laxity of the ligaments of the knee joint which permitted too much lateral motion.

37: 185-200 (Feb. 9) 1929

Diagnostic and Pathogenic Importance of Ultravirus of Tuberculosis. G. Paisseau, J. Valtis and A. Saenz.—p. 186.
*Treatment of Furuncles and Carbuncles with Bacteriophage. A. Raiga.—p. 187.

Treatment of Furuncles and Carbuncles with Bacteriophage (d'Herelle).—Raiga reports forty-five cases of furuncle and carbuncle treated with various kinds of bacteriophage (d'Herelle). The best results were observed with strong antistaphylococcus bacteriophage. The treatment was both local (dressing or injection) and general (subcutaneous injections) and was given, on the average, from one to three or four times. In 95 per cent of all patients a rapid cure was observed without any incision. The fever and pain disappeared in from a few hours to forty-eight hours after the first treatment; the inflamed area underwent rapid purulent liquefaction with rapid and easy elimination of necrosed cores; the edema and all inflammatory symptoms subsided rapidly, and in a short time the resulting scars were small, soft and invisible. There were seven recurrences of the furuncles, resulting probably from insufficient treatment or from the presence of "antiphages" in the patients' blood serum, but there were no recurrences of the carbuncles.

Progrès Médical, Paris

44: 270-308 (Feb. 16) 1929

*Melanoderma of Splenic Origin. M. Loeper, J. Ravier and A. Lesure.—p. 277.
Fecundity and Sterility. H. Vignes.—p. 281.

Melanoderma of Splenic Origin.—In a patient with advanced pulmonary tuberculosis, Loeper et al. observed a melanoderma of the face, axilla, lumbar region and genital organs and pigmentation of the oral mucous membrane. There were no symptoms of insufficiency of the suprarenals, but the spleen and the liver were large. At necropsy no lesions of the suprarenal glands were found, but the spleen was filled with ferruginous and melanic pigment and the débris of erythrocytes. Some pigment was found in the large veins, in the splenic veins and in the liver, around the portal vessels. Therefore, the authors think that the pigmentation of the skin and mucous membrane was caused by a special "melanodermic" form of tuberculosis of the spleen.

Revue d'Orthopedie, etc., Paris

16: 1-111 (Jan.) 1929

*Eburnation of Tibia. Frœlich.—p. 1.
Köhler's Tarsal Scaphoiditis. G. Massabuau and L. Marchand.—p. 32.
Congenital Partial Absence of Femur, Congenital Coxa Vara and Pathologic Dislocation of Femur. P. Feutelais.—p. 45.
Dislocation of Acromial End of Clavicle in Child. A. Mouchet.—p. 50.
New Orthopedic Apparatus for Treatment of Congenital Dislocations of Femur. L. Michel.—p. 53.
New Method of Closed Reduction of Congenital Dislocations of Femur. A. Curcio.—p. 59.

Eburnation of Tibia.—Frœlich reports four cases of eburnation of the tibia in children (girls), aged from 4 to 12, whose personal, familial, and hereditary histories were negative. The disease started insidiously and developed slowly. The middle part of the tibias became painful on palpation (sometimes spontaneously also), and increased in volume. The overlying skin was normal. There was discrete generalized polyadenitis. The roentgenograms showed increased density and increased volume of the tibias with considerable narrowing of the central marrow cavity. The biopsy showed eburneous osteitis. The bone marrow was sterile. The general condition of the patients was good. The Wassermann reaction was negative in two cases and positive in the two others. Antisyphilitic treatment checked the evolution of the disease but did not cure the present lesions.

Schweizerische medizinische Wochenschrift, Basel

59: 97-120 (Feb. 2) 1929

*Artificial Infant Feeding. A. Hottinger.—p. 97.
Significance of Exploratory Curettage and Biopsy for Early Diagnosis of Cancer of Female Genitalia. L. Stierlin.—p. 105.
New Visual Guidance Gastroscope. W. Sternberg.—p. 110.
Etiology, Prognosis and Treatment of Othematoma. E. Schlittler.—p. 111.
Possible Dangerous Effects of Psychiatric Diagnosis. Pfister.—p. 112.

Artificial Feeding of Infants.—Hottinger asserts that the artificial feeding of infants has been considerably improved in recent years. As proof of this statement he points to the fact that the mortality among artificially nourished infants is constantly decreasing. This is mainly due to increased knowledge of the physiology of infant metabolism. The author discusses in detail the significance of albumin, fat, carbohydrates, minerals, water and vitamins in infant nutrition. He enumerates the advantages and disadvantages of cow's milk, albumin milk, adapted milk, buttermilk, yoghurt and other preparations. In discussing the significance of carbohydrates, Hottinger points out that sugar solutions, diluted gruels or malt extracts are valuable additions to milk diets. He also describes various methods of milkless infant feeding. In evaluating an artificial infant food these points ought to be considered: 1. The weight of the child must increase normally. 2. The food should contain those essential ingredients which prevent such diseases as anemia, rickets and scurvy. 3. The artificially fed infant should have the same natural immunity against infectious diseases as the breast-fed child. The author concludes that in spite of considerable research on artificial feeding which has been done in recent years, there are still gaps in our knowledge, and no matter how good a substitute can be prepared, breast feeding is always the most advantageous for the infant.

Archivio Italiano di Chirurgia, Bologna

22: 557-663 (Dec.) 1928

Experimental Tracheal Stenosis. L. Pietrantoni.—p. 557.
Hypertrophy and Hyperplasia of Muscular Tunic of Intestine. M. Bufalini and A. Mirolli.—p. 589.
*Volvulus Associated with Strangulated Hernia. N. V. Bedarida.—p. 634.
*Acute Intestinal Occlusion from Subserous Hematoma of Obscure Origin. E. Santoro.—p. 645.

Intestinal Occlusions of Twofold Origin (Volvulus and Strangulated Hernia).—Bedarida emphasizes that the recognition of two concomitant forms of occlusion and their nature, such as volvulus and strangulated hernia, is not only difficult but sometimes impossible, even at operation, since the disturbances in the alimentary tract caused by the two conditions are often identical. It is a common error to assume that the clinical picture results solely from the strangulated hernia. It happens sometimes that the concomitant cause is suspected only after a herniotomy, which, together with the persistence of symptoms of occlusion, shows the need for a second intervention in the form of a laparotomy. There are

very few symptoms that aid in a diagnosis of concurrent volvulus and strangulated hernia. When the loop of the volvulus is affected by the strangulated hernia in such a manner that the point of torsion and a part of the loops are in the abdominal cavity, the meteorism is quite intense but often asymmetrical, and the pain is high up—at or near the umbilicus. Naturally, the distention of the loops and the seat of the pain are in relation to the site of the volvulus, varying according as the volvulus manifests itself on the right or on the left side, in the small intestine, in the cecum or in the colon. If the volvulus is completely independent of the strangulated hernia, the intestine is obstructed at two points, two loops being involved. The symptoms, under such conditions, develop with great rapidity and violence; the abdomen soon becomes distended and meteoric throughout, and the condition of the patient becomes rapidly worse. The author reports his two personal cases at length in order that his errors may be a guide to others. While the recognition of such concomitant occlusions is difficult, nevertheless, if one studies the case carefully, taking account of, and assigning the proper value to, every detail of the anamnesis, the course of the acute period, and the subjective and objective symptoms, sufficient criteria will be obtained on which to base a probable diagnosis, either at the clinical examination or at the operation.

Acute Intestinal Occlusion from Subserous Hematoma of Obscure Origin.—Santoro adds his personal case, that of a boy, aged 7, to the few cases of acute intestinal occlusion due to an obstructing hematoma reported in the literature. The case is interesting because of its rarity. In substance, the symptomatology consisted of a high obstruction of the intestine (jejunum) without signs of strangulation. Certain main factors established beyond doubt the diagnosis of acute intestinal occlusion; namely, the sudden appearance of the symptoms, the intractable vomiting, the complete closure of the bowel to feces and to flatus, and the appearance in the epigastrium of a painful tumor. The symptoms of ileus due to strangulation were absent. When first seen by the author, on the seventh day of the disorder, the patient, in spite of the comparatively long period of illness, presented a good general condition: a full rhythmic pulse of normal frequency, a moist tongue, normal temperature, no hiccup, only slightly painful abdomen, and no abnormal reflexes. The mildness of the local and the general symptoms justified the exclusion of grave changes in nutrition due to serious involvement of the intestinal walls, whose blood supply was apparently not profoundly impaired. The condition was evidently a simple occlusion; and as for the site, the dilatation of the stomach with absolute absence of meteorism of the small intestine and the colon, the exclusively biliary nature of the obstinate vomiting and the adjacent site of the tumefaction all pointed clearly to a high obstruction of the intestine. Under chloroform anesthesia laparotomy was performed. For a distance of about 10 cm., the jejunum was distended in the form of a barrel, the diameter of which at the center was 5 cm. The "barrel" on palpation appeared to be full and tense; the serosa was smooth, clear and without traces of exudate or blackness. While the author was examining the loop delicately to discover the contents of the "barrel" it ruptured and the gauze surrounding the field was inundated with a black fluid (blood). There was no bad odor and no trace of fecal matter, bile, food or other substance. The author was unable to discover the cause of the hemorrhage. The intestine was repaired and the abdomen was closed. The patient recovered rapidly, and when seen three months later was well nourished, had a good color and did not complain of any further pain in the epigastrium.

Crónica Médica, Lima

45: 225-268 (Aug.) 1928. Partial Index

*Some Staphylococcal Infections Treated by Local Immunization. J. Avendaño.—p. 225.
*Andes Disease. C. Monge M.—p. 238.

45: 269-304 (Sept.) 1928. Partial Index

*Andes Disease. C. Monge et al.—p. 282.

Some Staphylococcal Infections Treated by Local Immunization.—Avendaño has successfully treated seven cases of staphylococcal infection by local immunization. A vaccine prepared according to Besredka's technic was used. One patient suffered from a painful abscess in the axilla. Three doses of vaccine, 0.5 cc., 1 cc. and 1.5 cc., respectively, were injected subcutaneously at two day intervals. The patient recovered. Other conditions treated effectively were anthrax in the gluteal region; osteomyelitis of the femur; postpneumonic miliary abscesses of the thorax, face, head and arms; generalized pemphigus foliaceus, and febrile pyodermitis.

Andes Disease.—Monge et al. describe a disease characterized by an erythremic syndrome which they assert has not been observed previously. There is considerable congestion of the face, pain in the bones and dizziness, all of which suggest erythremia. The union of erythremic syndromes constitutes the disease of the Andes. The investigations reported on by the author were made in Oroya, at an altitude of 12,000 feet, and in Morococha, at an altitude of 14,200 feet. Morococha is said to be the highest inhabited locality in the world. In some persons, especially recent arrivals in the community, the existence of a condition of functional inferiority with signs of physical and mental disturbances has been proved. This condition, which generally precedes the soroche, improves when the individual becomes acclimatized. Sometimes, however, acclimatization is not possible, and the individual is compelled to return to a lower altitude. Acclimatization to altitudes means a physiologic deviation, in which erythrocytosis plays a rôle. The symptomatology of soroche is only an acute form of erythremia.

Revista Medica Cubana, Havana

40: 1-130 (Jan.) 1929. Partial Index

Treatment of Apparent Death. A. Diaz Albertini.—p. 10.
*Appendicitis: Analysis of 2,500 Cases. N. Gómez de Rosas.—p. 18.

Appendicitis.—Among 2,500 operations for appendicitis which Gómez de Rosas performed were 1,700 cases of chronic appendicitis. The mortality was low: there were no deaths in the chronic cases and not more than 2 per cent in the acute cases. Early diagnosis and operation within the first twenty-four to forty-eight hours are important factors in maintaining this low mortality rate.

Semana Médica, Buenos Aires

36: 1-60 (Jan. 3) 1929

Genuine Hermaphrodism in Birds. C. Lagos Garcia.—p. 2.
Familial Disease of Nails. A. A. Fernández.—p. 9.
Schizomania and Schizoidia (Attenuated Forms of Schizophrenia). F. Gorriti.—p. 17.
*Abdominal Menstrual Fistula. C. Mesa.—p. 23.
Speed of Conduction in Sciatic Nerve of Frog. A. Sartori and A. Gargiulo.—p. 25.
Problem of Antivenereal Campaign in Chaco of Santa Fe. R. Klemensiewicz.—p. 27.

Abdominal Menstrual Fistula.—After a self-induced abortion Mesa's patient had fever, and a generalized acute inflammation of the genital organs. A month later, appendectomy and amputation of a left pyosalpinx were performed. The postoperative course was very stormy. The wound did not heal; a fistula developed through which feces were passed whenever the patient took a cathartic, and menstrual blood at the time of menstruation. At a subsequent operation the fistula was found to lead to the stump of the left tube, and into the rectum. The author believes that this postoperative complication is very uncommon and was caused by faulty operative technic. To avoid these serious complications, it is necessary when amputation of the adnexa is performed to make a perfect peritonization of the stump, and to apply iodine.

Siglo Médico, Madrid

82: 317-344 (Feb. 9) 1929

*Technic of Pulmonary Lavage. García Vicente.—p. 317.
Therapeutic Pseudopolyvalence of Anti-Alpha Vaccine: Affinity of Tuberculosis with Many Diseases of Unknown Etiology. D. V. de San Andrés.—p. 320.

Technic of Pulmonary Lavage.—García Vicente says that the introduction of liquids into the tracheobronchial tree to aid in the removal of foreign bodies has been used infrequently. The author's technic consists in the introduction of about 2 liters of a physiologic solution of sodium chloride heated to 38 C. (100.4 F.). The effect of the lavage is limited to the bronchial tree of only one lung without compromising in the least the respiratory mechanism of the patient. Gravity renders pos-

sible the evacuation of the liquid injected. Under local anesthesia of the pharynx and larynx, a sound is passed into the trachea. The author uses Porges' urethral sound, caliber 14 in children and 15 in adults, passing it only as far as the tracheal bifurcation. The patient is placed on the table on the side of the lung which is to be injected, and the table is inclined in such a manner that the patient's head will be 15 or 20 cm. lower than the pelvis. The fenestra in the sound must point toward the bronchus of the lung which is going to be injected. When from 60 to 100 cc. has been injected, the liquid begins to return. This method is indicated in all suppurating bronchopulmonary processes, and in cases of foreign bodies in the lung.

Archiv für Kinderheilkunde, Stuttgart

86: 81-160 (Jan. 25) 1929

Point of Action and Effect of Ultraviolet Rays in Food and in Body of Children. H. Koeppe.—p. 81.
*Results with Weissenberg's Citric Acid Whole Milk, Especially as a Prophylactic Against Rickets. R. Behrens.—p. 90.
Psychoanalysis Applied in Anorexia in Children. A. Bretschneider.—p. 94.
*Influenzal Meningitis in Infants. E. Nedelmann.—p. 98.
Degeneration and Foot Deformities. A. Fischer.—p. 109.
Symptomatic Purpura Hemorrhagica After Rubella. T. Pitten.—p. 114.
Mortality of New-Born Infants in Mecklenburg Before and After the War. H. Brüning and E. Mahlo.—p. 122.

Results with Weissenberg's Citric Acid Whole Milk, Especially in Rickets.—Behrens reports his results with acidulated unskimmed milk, which he gave to 109 children aged from a few days to more than 5 months. The milk was tolerated well by all, especially the younger infants. The duration of this diet varied from four weeks to ten months. The weight increased quickly in most of the children; a few needed more time to adjust themselves. Symptoms of rickets found in some at the time of their arrival in the sanatorium not only were checked in their development but diminished spontaneously. Among sixty children dismissed from the institution, eleven showed slight, five medium, and eight serious, symptoms of rickets. The author compared these results with his observations in the consultation center for infant care connected with his sanatorium and found, among 162 infants, ninety with no symptoms, twenty-six with slight symptoms, twenty-five with moderate symptoms, and twenty-one with grave lesions. The author recommends the use of citric acid whole milk as it is a simple, inexpensive food, easily digested and prophylactic against rickets.

Influenzal Meningitis in Infants.—Nedelmann insists on a strict distinction between influenza and suppurating meningitis. He reports eight cases. In six the blood test was positive. The author believes that influenzal meningitis is a septic disease in which the inflammation of the meninges, due to metastasis, becomes preponderant and causes death. The blood culture always contained Pfeiffer's bacilli as soon as the bacteriologic examination indicated an infection by this cause. None of the strains of this organism proved to be hemolytic.

Archiv für klinische Chirurgie, Berlin

154: 1-424 (Jan. 30) 1929

Form and Function of Goiter in North America. C. A. Hellwig.—p. 1.
Form and Etiology of "Scoliosis of Face" in Torticollis of Muscular and Other Origin. H. Walter.—p. 32.
*Splenic Fever and Spleen Function. H. Hellner and H. U. Kallius.—p. 66.
*Nephrotomy Without Suture of Parenchyma as Means of Preventing Postoperative Hemorrhage. P. Rosenstein.—p. 79.
Clinical Experiences with Braun's Epidermal Grafts. H. Mannheim.—p. 98.
Functional Relation Between Bladder and Kidney. H. Boeminghaus.—p. 114.
Short Transverse Mesocolon of Congenital Origin. R. Finochietto and P. Schlanger.—p. 129.
*Herniotomy with Suture of Tissues of Anterior Abdominal Wall to Poupart's Ligament as Etiologic Factor in Development of Femoral Hernia. I. V. Studsinsky.—p. 142.
Investigations on Narrowing of Blood Vessels as Result of Circular Suture of Arteries and Autotransplantation of Veins. A. Zeitlin.—p. 150.
*Etiology and Treatment of Chronic Trophic Ulcers. A. Wischnewsky.—p. 195.
Etiology and Serum Therapy of Foudroyant Appendicitis; Analysis of 298 Cases. R. Hilgermann and W. Pohl.—p. 248.
*Extrathoracic Dermo-Esophagoplasty. W. R. Braizew.—p. 320.
Carbohydrate Metabolism in Exophthalmic Goiter Before and After Thyroidectomy. F. B. Hein-Heifetz.—p. 367.
Occurrence of Disturbances of Carbohydrate Metabolism and of Diabetes Mellitus with Diseases of Pancreas. H. Ney.—p. 378.
*Basic Characteristics of Regeneration Hormones. R. Fränkel.—p. 398.
Unilateral Parathyroidectomy in Treatment of Ankylosing Polyarthritis. E. Gold.—p. 418.

Splenic Fever and Spleen Function.—Hellner and Kallius are of the opinion that when splenic fever develops following a splenectomy, it must be regarded as a primary aseptic fever resulting from the accumulation of pyrogenic substances in the blood. When the fever is secondary in nature, it results from the loss or absence of certain spleen functions that normally are related to the maintenance of immune processes in the organism.

Prevention of Hemorrhage After Nephrotomy.—Rosenstein asserts that any hemorrhage from the kidney parenchyma following nephrotomy comes from the blood vessels in Bertini's columns. It can easily be avoided by not suturing the parenchyma, as has hitherto been the custom. The sutures are unnecessary and dangerous, whereas if the edges of the incision are allowed to remain in apposition without suture, hemorrhage will not occur. The same is true when portions of the kidney are resected. Of course, if the kidney pelvis has been incised, the wound must be sutured.

Occurrence of Femoral Hernia After Inguinal Herniotomy.—Studsinsky points out that it is not good surgery to apply the same operative technic in all cases of inguinal hernia, especially so far as operations are concerned that are based on closure of the inguinal opening by suturing of the muscles and aponeuroses of the abdominal wall to Poupart's ligament. This ligament often is so weak that such suturing tends to draw it upward, thus making traction on the femoral ring, enlarging it and inviting the occurrence of a femoral hernia. This is especially true of Girard's method. The author employs the method of Ruggi-Parlavecchio in such cases because it closes both the inguinal and the femoral openings.

Etiology and Treatment of Chronic Trophic Ulcers.—Experiments made by Wischnewsky on twenty dogs have convinced him that by means of irritation of the central end of a divided nerve it is possible to produce a chronic trophic ulcer and that if a neurotomy is performed, healing of the ulcer results in most cases. This observation has been confirmed clinically in forty-five cases. In twenty-five of these cases healing was evident two years after the operation; in seven cases there was a recurrence; in thirteen cases, only a partial result or failure was reported. It was also noted that age is an important factor in the etiology. Most of the ulcers were in persons more than 30 years of age. The best results from treatment were seen in patients under 30. Recurrences are reported only in patients more than 30, and in these healing is less apt to occur than in the younger patients. The author prefers to operate under local anesthesia and warns that the nerve concerned in the production of the ulcer must be excised as far proximally as is possible. He describes his technic in detail.

Esophagoplasty for Obstruction of Esophagus.—Braizew reports seven cases of obstruction of the esophagus from erosion following the drinking of some caustic liquid, usually lye, in which he resorted to a dermal esophagoplasty. A new esophagus was constructed from the skin of the chest. Into the upper end of this skin tube is sutured the lowest patent part of the esophagus and into the lower end a specially made tube of the wall of the stomach. A perfect functional result was obtained in five of the cases. In a sixth case there was slight constriction of the esophageal end by a keloid of the skin scar. The seventh patient died from otitis media and cerebral venous sinus thrombosis before the operation was completed. This operation is designated as an antethoracic dermato-esophagoplasty, and is described fully.

Hormones Influencing Regeneration of Tissue.—Fränkel is convinced that there are present in the blood hormones that are concerned primarily and solely with the regeneration of tissue. They are two in number: one retards regeneration; the other stimulates it. He would term one a plastic hormone; the other, a differentiating hormone. He believes that the plastic hormone results from the absorption

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of decomposition products or, perhaps, from these substances themselves. The differentiating hormone may be an antibody acting on the decomposition products.

Deutsche medizinische Wochenschrift, Berlin

55: 129-172 (Jan. 25) 1929

*Prophylaxis of Influenza. P. Schmidt.—p. 129.
Narcosis by Combination of Controllable and Uncontrollable Anesthetics. O. Gros.—p. 130.
*Interpretation of Negative Schick Test, Particularly in Infants. E. Friedberger and F. Heim.—p. 132.
Significance of Complement Fixation Reaction for Diagnosis of Gonorrhea. W. Scholtz and J. Dörffel.—p. 134.
Dangers of "Partial" Serum Reaction for Syphilitic and Healthy Persons. H. Sowade.—p. 136.
Prevention of Infant Mortality During Birth by New Regulations. M. Hirsch.—p. 138.
Progress of Homeopathy. E. Bastanier.—p. 141.
Can Homeopathy Teach Us Anything? H. Freund.—p. 144.

Prophylaxis of Influenza. — Schmidt states that many authorities are of the opinion that in an epidemic of influenza effective prophylaxis is not possible. The fact that Pfeiffer's bacilli are found in great numbers in the conjunctiva has led to the assumption that the bacillus frequently enters through the eyes. Schmidt, with others, believes that public gatherings are most often responsible for the rapid spread of the disease. Hence in times of epidemics they should be avoided. When this is not possible, as, for instance, in large cities, the inhaled air may be filtered through plugs of cotton placed in the nostrils. The conjunctiva may be protected by wearing goggles. To protect the lips and nose hydrous wool fat may be applied. Touching the eyes, nose or mouth with the fingers should be avoided. Scrupulous cleanliness, particularly with regard to handkerchiefs, is also essential for effective influenza prophylaxis.

Interpretation of Negative Schick Reaction, Particularly in Infants.—Friedberger and Heim mention that it has been observed that infants during the first year of life react negatively to the Schick test. Older children usually react positively, while in adults the reaction becomes negative again. Experiments on new-born and on grown rabbits with diphtheria toxin, as well as with other toxins, showed that the new-born animals usually gave negative reactions while the older animals reacted positively. The authors also experimented with eel toxins, first on adult persons and later on infants, and obtained similar results. Some authorities are of the opinion that the immunity of the infant is caused by the transmission of antibodies from the mother to the nursing child. The experiences of Friedberger and Heim, however, do not support this assumption. They assert that the immunity of the new-born to toxins and antitoxins is a general physiologic condition. Additional proof of this is the fact that in asphyxia infants frequently show a greater resistance than adults. This phenomenon of innate immunity in the new-born is designated by the authors as "infant inactivity" or "reaction inertia."

55: 173-212 (Feb. 1) 1929

Blood Sugar Content in Relation to Skin Diseases. G. A. Rost.—p. 173.
Vasodilatory Effects of Various Hypnotics, Especially of Small, Sedative Doses of Chloral Hydrate. H. Guggenheimer and I. Fisher.—p. 177.
Treatment of Adams-Stokes Disease. G. W. Parade and K. Voit.—p. 179.
Elimination of Lactic Acid During Exercise. I. Snapper and A. Grünbaum.—p. 181.
Changes in Character of Patients with Epidemic Encephalitis. G. Engerth and H. Hoff.—p. 181.
Microscopic Examination of Capillaries in Epilepsy. A. M. Brahn.—p. 183.
Transitory Hemiplegia. E. Kaufmann.—p. 184.
Practical Application and Significance of Cistern Puncture or of Suboccipital Puncture for Diagnosis of Syphilis. L. Zweig.—p. 185.
*Gummatous Osteitis and Periostitis of Cervical Vertebrae. H. Wulfsohn.—p. 186.
Experiences with Nitrous Oxide Anesthesia in Gynecology and Obstetrics. C. Schroeder.—p. 186.
Protective Vaccination Bandage. T. Hoffa.—p. 189.
"Latent" Syphilis Noteworthy by Reason of Its Infectiousness and Its Serologic Reactions. Klütz.—p. 190.

Gummatous Osteitis and Periostitis of Cervical Vertebrae.—Wulfsohn reports the case of a woman, aged 27, who complained of severe pains in the back of the neck. The head was held stiff, and in order to look to the side it was necessary to turn the whole upper part of the body. The patient was emaciated and cyanotic. On account of irregularity in the menses and because of the patient's poor physical condition, a diagnosis of ectopic pregnancy had previously been made. The pains in the neck were thought to be rheumatic and were treated accordingly. The heart and lungs were apparently normal. Roentgenoscopy revealed that the fourth and fifth cervical vertebrae were partially destroyed. The Wassermann reaction and the Sachs-Georgi test were positive. Further questioning revealed that several years previously the patient had observed a vesicle on her tongue. She had also had a painless swelling of the maxillary glands. On the basis of these discoveries, Wulfsohn diagnosed gummatous osteitis and periostitis of the cervical vertebrae. He gave at first only mild antisyphilitic treatment with good results. Later neoarsphenamine was given.

Klinische Wochenschrift, Berlin

8: 97-144 (Jan. 15) 1929

Goiter and Iodine Therapy. B. Breitner.—p. 97.
Skin Reactions Following Applications of Various Species of Rhus. H. Biberstein.—p. 99.
Physiologic and Pathologic Significance of Parasympathetic Fibers in Posterior Roots of Spinal Nerves. K. Kuré, T. Sawatari and K. Kawaguzi.—p. 102.
Experiments on Acute and Chronic Effects of Morphine. E. Grünthal and P. Hoefer.—p. 104.
*Paroxysmal Bradycardia. P. Uhlenbruck.—p. 107.
Determination of Hydrogen Ion Concentration of Urine. F. Mainzer.—p. 109.
*Electrocardiographic Study of Diabetic Coma. H. Taterka.—p. 110.
*New Syphilis Reaction (Meinicke "Clarification" Reaction). E. Meinicke.—p. 112.
Inheritance of Blood Groups. B. Aschner.—p. 113.
Possibility of Coupling of Blood Groups. O. Thomsen.—p. 114.

Unusual Form of Paroxysmal Bradycardia. — Uhlenbruck reports a case of paroxysmal bradycardia in a youth, aged 16, who probably suffered from organic heart disease. The physician in charge of the case had diagnosed endocarditis with cerebral embolism. He described the first attack as follows: The patient complained of severe headache; his consciousness was disturbed; he was vomiting; the pulse became slow and irregular, and his face was cyanotic. A venesection which was made a few days later caused psychic excitation. The patient had an attack of tachycardia and the blood pressure increased markedly. He complained again of a serious headache, his face became cyanotic and the pupils were dilated. A vomiting spell lasted for several hours. Then the pulsation became very slow. A lumbar puncture which was made five hours after the beginning of the attack revealed a considerable increase in the pressure of the cerebrospinal fluid. The Wassermann reaction and other tests all gave negative results. The bradycardia lasted throughout the day. Ten days later the patient had a similar attack which again was caused by psychic excitation. In the treatment sedatives were given in preference to digitalis.

Electrocardiographic Study of Diabetic Coma.—Taterka observed that electrocardiographic changes appeared in direct proportion to the seriousness and duration of diabetic coma. Tests which were made on healthy persons and on diabetic patients not in coma proved that these electrocardiographic changes could not have been caused entirely by insulin or digitalis. Animal experiments made by Ehrmann showed that the poisonous products of metabolism in diabetic coma influence not only the vasomotor activity but particularly the cardiac vessels. Taterka is therefore of the opinion that these electrocardiographic changes are signs of harmful toxic effects on the myocardium which follow and are caused by acidosis. Thus the author's observations explain the vasomotor insufficiency which is a characteristic symptom of diabetic coma. They also reveal the cause of the fatalities from heart failure, which often occur even after the coma has passed.

New Reaction for Syphilis. — Meinicke describes a new reaction for syphilis. To differentiate it from his other test method which he called the Meinicke turbidity reaction, he designates this one as the Meinicke clarification reaction. For both tests he uses tolu. For the clarification reaction, however, he uses three times as much as in the turbidity test. Instead of using extracts from the hearts of horses he uses bovine extracts. The characteristic of this reaction is that the original opaque mixture becomes clear when the reaction is positive. It remains turbid if it is negative. The test tubes

containing the completed mixture should be left from eighteen to twenty hours at a temperature of about 68 F. Meinicke asserts that the results can be read with the naked eye by holding the tube toward the light.

Medizinische Klinik, Berlin

25: 133-172 (Jan. 25) 1929

Allergic Diseases of Skin. W. Frei.—p. 133.
Brucella Abortus Infections in Man. C. Prausnitz.—p. 135.
Etiology and Treatment of Chronic Arthritis. A. Laqueur.—p. 137.
*Miners' Disease in Joachimstal. J. Löwy.—p. 141.
Prognosis and Treatment of Various Types of Angina. A. Elkeles.—p. 142.
*Treatment of Exophthalmic Goiter with Natural Carbonated Baths. Kretschmer and Wessel.—p. 144.
Muscular Rheumatism and Massage: I. Diagnosis and Treatment of Rheumatic Hardening of Muscles. W. Ruhmann.—p. 145. C'td.
Synergy Between Acute Infectious Diseases (Measles and Whooping Cough). K. Ochsenius.—p. 147.

Miners' Disease in Joachimstal.—Löwy directs attention to the fact that a great number of miners in Joachimstal either become invalids or die between the ages of 30 and 40. The usual symptoms of this so-called miners' disease are anemia, difficulty in breathing, piercing pains in the chest and weakness. Some physicians diagnosed tuberculosis. Löwy made a careful study of two cases. In both patients he found a bronchial carcinoma. The author states that similar cases were observed among the miners in Schneeberg. The etiology of the disease is not yet entirely clear. In Joachimstal which formerly had silver mines, radium is now extracted from pitchblend. It has been found that the emanation content of the air in the mines of Schneeberg and Joachimstal is 50 and 40 mache units, respectively. The dust contains arsenic. But whether and to what extent any of these factors influence the health of the miners has not been ascertained.

Treatment of Exophthalmic Goiter with Natural Carbonated Baths.—The gas baths of natural carbon dioxide in Meinberg, which also contain small amounts of radium, were employed by Kretschmer and Wessel in the treatment of exophthalmic goiter. The authors give a detailed report of two cases and state that they observed favorable results in four others. The treatments were usually given about four times a week, each one lasting fifteen minutes. In the two cases reported twenty and thirty treatments, respectively, were given. The authors observed increase in weight, improvement in the general condition, a decrease in the size of the goiter and a diminution of the tachycardia. They consider this treatment valuable in the early stages of the disease, in mild cases, and also in those patients in whom surgical treatment is not advisable on account of serious heart disease or a weakened general condition.

Münchener medizinische Wochenschrift, Munich

76: 93-140 (Jan. 18) 1929

Heredity in Endocrine Dysfunction. W. Weygandt.—p. 93.
Prophylaxis of Whooping Cough with Vaccines. F. von Bernuth.—p. 96.
Requirements for Development of Diabetes. E. Wiechmann.—p. 98.
*Cesarean Section: Review of 113 Cases. A. Hessler.—p. 101.
Relation Between Orthopedics and Internal Medicine and Neurology. M. Lange.—p. 103.
Treatment of Cystopyelitis with Ethereal Oils. G. Stern.—p. 106.
Effects of Stings of Blood-Sucking Insects. A. Hase.—p. 107.
Necessity of Welfare Stations for Care of Diabetic Patients. W. Löwenberg and G. Noah.—p. 109.
Enforcement of Law to Combat Venereal Diseases in Germany. E. Langer.—p. 110.
*Fatal Menorrhagia in Girl, Aged Twelve. M. Plaut.—p. 112.
Improvement of Laced Bandages to Facilitate Their General Application for Wound, Pressure or Traction Dressings. D. Sarason.—p. 113.
Viability of the New-Born with Large Umbilical Hernia. Durlacher.—p. 114.
Diseases of Ear in Syphilis. J. Zange.—p. 114.

Cesarean Section.—Hessler states that in 2,598 confinements, 113, or 4.2 per cent, were terminated by cesarean section. The longitudinal incision was resorted to in six cases; in all other cases the transverse incision was made. Immediately after the child had been removed from the uterus, the mother was given an intravenous injection of solution of pituitary to effect contraction of the uterus. For narcosis a combination of oxygen, ether and chloroform was employed. As indications for cesarean section, the author considers a narrow pelvis, eclampsia, placenta praevia and certain positions of the fetus.

Fatal Menorrhagia in a Young Girl.—Plaut reports a case of excessive bleeding during the first menstrual period which on the sixth day resulted in the death of the patient. The girl, who had not quite completed her twelfth year, was of normal and healthy development. Neither anemia nor hemophilia was observed. The hemorrhage had continued for two days before the mother sought medical aid. Ergot had no effect on the bleeding. Various medicaments, injections with sodium chloride solution and with gelatin, roentgen irradiation of the spleen and vaginal tamponade were of no avail. The much weakened condition of the patient necessitated a blood transfusion of 400 cc., but neither this nor the use of epinephrine and oxygen prevented the fatal outcome. A postmortem examination was not made.

Wiener medizinische Wochenschrift, Vienna

79: 41-72 (Jan. 5)1929. Partial Index

*Causes and Results of Decrease in Birth Rate. H. Peters.—p. 47.
*Mechanism Involved in Death from Electrical Shock. P. Schneider.—p. 53.

Causes and Results of Decrease in Birth Rate.—Peters calls attention to the fact that since 1923 the number of births has rapidly decreased not only in Austria but in nearly all European countries. He considers the use of contraceptives and the great number of abortions which are usually brought about artificially as the main cause of the dimunition in the birth rate. He shows that this decrease in the number of births coincides in Austria with the time of the depreciation of money values and of the general economic decline. Considered from the economic and social point of view, Peters asserts that, for the present at least, a lowering of the birth rate is desirable. He hopes, however, that within the next ten years economic conditions will improve sufficiently, so that a further limitation of offspring will not be needed, because prolongation of a decreased birth rate would lead to race suicide.

Mechanism Involved in Death from Electrical Shock.—Schneider reports the case of a man who came in contact with a 5,000 volt electric current and appeared to be dead. Artificial respiration was started a few minutes later, and a lumbar puncture was made about an hour after the accident. The puncture yielded considerable cerebrospinal fluid. The pressure with which it was discharged was three times the normal pressure. Two hours after the accident death spots appeared, and attempts to restore life were discontinued. On the basis of the conditions found at the postmortem examination, the author is of the opinion that the circulation was still active for about an hour after the accident occurred. Death was caused by cerebral paralysis which suspended the heart action. Schneider advises that in accidents of this kind artificial respiration should be started immediately, and the intracerebral pressure should be relieved as early as possible by lumbar puncture.

Zeitschrift für Krebsforschung, Berlin

28: 191-300 (Jan. 18) 1929

General Metabolism in Uterine Carcinoma. N. Louros and Gaessler.—p. 191.
Suggestions for Organization of Radium Therapy Centers for Treatment of Carcinoma. Werner.—p. 219.
Report on Experimental Malignant Tumors. O. Bittmann and A. Goldfeder.—p. 228.
Nodular Hyperplasia of Pancreas in Old Dogs. H. Baumgärtner.—p. 241.
*Local Immunization Against Carcinoma by Irradiation. B. Sokoloff.—p. 256.
Pregnancy and Carcinoma: III. Alimentary Canal. S. Peller and W. Stöhr.—p. 266.
Tar Carcinoma of Briquet Makers in Coal Factories of Baden and South Wales. Teutschlaender.—p. 283.

Local Immunization Against Carcinoma by Irradiation.—Sokoloff made seventy experiments with white mice in which he grafted mouse adenocarcinomas intracutaneously into both groins; then he irradiated the left groin for five, eight and ten minute periods. The results observed after four and five weeks were: 40 per cent negative, with slower development after five minutes of irradiation; 50 per cent negative, with slower development after the eight minutes of irradiation and 74 per cent negative with very slow development after ten minutes of irradiation. These experiments lead the author to the conclusion that roentgen irradiation may result in more or

less pronounced local immunization. The grafts transplanted into irradiated areas were retarded in their development or disappeared completely in 70 per cent of the cases (ten minutes of irradiation). A smaller dose of roentgen rays is less effective.

Zeitschrift für Tuberkulose, Leipzig

53: 1-96 (Feb.) 1929

Filtrability of Tubercle Bacillus. L. Lange and K. W. Clauberg.—p. 1.
Examination of Filtrates of Tubercle Bacilli. W. Weichardt.—p. 8.
Exercise in Treatment of Tuberculosis. B. H. Vos.—p. 11.
*Respiratory Exercises in Treatment of Pulmonary Tuberculosis. K. Siegfried.—p. 20.
Value of Complement Deviation Reactions of Besredka and Klopstock-Neuberg in Diagnosis of Allergic Conditions. F. Loben and K. Glaum. —p. 32.
Carbohydrate Metabolism in Pulmonary Tuberculosis. R. Ginsberg and R. Pewsner.—p. 38.

Special Respiratory Exercises in Pulmonary Tuberculosis (Stauprinzip).—Siegfried reexamined twenty-two teachers who had been treated by the "Stauprinzip" and whom he had seen for the first time in 1923. Three patients reported failure, but nineteen showed improvement or recovery. Seven had old slight tuberculosis, more or less cured; in seven others the disease was acute, in some with hemorrhages; four patients had relapses. The author believes that the respiratory exercises not only develop the anterior abdominal wall but stimulate the secretion of the mucus, regulating and restricting it to the time of the daily exercises. It is evident that not all cases of tuberculosis can be treated effectively with breathing exercises, but the psychologic effect is desirable.

Zentralblatt für Chirurgie, Leipzig

56: 193-256 (Jan. 26) 1929

Tribromethanol Anesthesia for Children. R. Sievers.—p. 194.
Tribromethanol Anesthesia. O. Butzengeiger.—p. 204.
*Operation for Hallux Valgus. A. Schanz.—p. 209.
*Appendicitis and Trauma. T. Wilhelm.—p. 210.
Case of Cervical Rib. A. Reccius.—p. 211.

Operation for Hallux Valgus.—Schanz has modified the usual operation for this condition, which was first described by Ludloff, by excising the proximal half of the first phalanx of the big toe instead of the head of the metatarsal. He reports good results.

Relation of Trauma to Appendicitis.—Wilhelm reiterates his belief that the relationship of trauma to appendicitis as a cause has not yet been proved. He feels that when appendicitis does develop soon after a trauma it is not because of the trauma but rather as an incidental occurrence.

Zentralblatt für Gynäkologie, Leipzig

53: 65-128 (Jan. 12) 1929

*Intra-Uterine Charcoal Therapy in Febrile Abortion. F. C. Geller.—p. 82.
Parasacral Anesthesia. H. Rummel.—p. 86.
*Predisposition to Peritonitis During Menstruation. F. Unterberger.—p. 90.
Rudimentary Accessory Vagina. B. Ottow.—p. 92.
Heterotopic Endometrioid Proliferations, Especially at the Umbilicus. H. Baltzer.—p. 99.
Endogenous, Spontaneous, Puerperal Infection. W. Heer.—p. 102.
*Value of Sugar Tolerance Test in Diagnosis of Early Pregnancy. R. Kleitsman.—p. 104.
Value of Sachs' Floating Test for Intact Placenta. J. Putz.—p. 110.

Intra-Uterine Charcoal Therapy in Febrile Abortion.—Geller continued his investigations on the effects of charcoal treatment, which he began in 1925. His new experiments concerned its growth-inhibiting action on various bacilli. He found that growth inhibition varies according to the liquid used as a solvent. According to his tables, charcoal has a great influence on the growth of the bacteria in liquids in which it will dissolve easily (salt solution, bouillon). Liquids which do not dissolve charcoal easily (serum, defibrinated blood) do not show any inhibiting effect on bacteria. The author thinks, however, that the contractions of the uterus mechanically grind the charcoal and mix it with blood, thus bringing about the desired effect, even if sometimes whole pieces of charcoal are eliminated. In veterinary medicine intra-uterine charcoal therapy has completely replaced the irrigation method formerly used in cases of abortion and endometritis; hence the author believes that it may have a place in human therapy.

Predisposition to Peritonitis During Menstruation.—Unterberger reports two cases in which he observed a tendency to peritonitis caused by menstruation. A woman, aged 37, a secundipara, contracted peritonitis by using sanitary napkins infected by her sister, who had a febrile abortion. Laparotomy saved this patient but was useless in the second case, that of a woman, aged 44, who had peritonitis after having taken care of her husband, who was ill with facial erysipelas. An evident streptococcus infection had been contracted during menstruation.

Value of Sugar Tolerance Test for Diagnosis of Early Pregnancy.—Kleitsman used the sugar tolerance test in thirty cases of pregnant, nonpregnant and climacteric women for diagnostic purposes. He found that the blood sugar content in pregnant women equals that of the premenstrual period in nonpregnant women. Hence this test is not of value for the early diagnosis of pregnancy.

53: 129-192 (Jan. 19) 1929

*Unusual Accident in Therapeutic Abortion. H. Sellheim.—p. 130.
*Perforation of an Ovarian Endometrioma into Vagina. A. Hermstein. —p. 135.
High Frequency Cautery in Gynecology. P. Feldweg.—p. 140.
Use of Solution of Secondary Butylbrompropenylbarbituric Acid to Produce Twilight Sleep. L. Löfkovits.—p. 142.
Roentgen Diagnosis of Triplet Pregnancy in Eighth Month. G. Albano. —p. 146.
Constriction of Occiput of New-Born Child by Rigid Cervix During Delivery. M. Oing.—p. 150.
Therapy in Unreduced Transverse Presentation and New Method of Decapitation. I. Freid.—p. 155.
Climacteric Hemorrhages and Disturbances of Circulation. W. Stemmer. —p. 162.
*Myomectomy in Pregnant Women. S. Liebmann.—p. 172.
*Simultaneous Bilateral Tubal Pregnancy. A. A. Blagodarow.—p. 180.

Unusual Accident in Therapeutic Abortion.—Owing to continuous hemorrhages and a consequent high degree of anemia in a case of placenta praevia in a primipara, aged 21, it was decided that therapeutic abortion was necessary to save the patient's life. Sellheim dilated the cervix with laminaria tents and Hegar's dilators for two days. In spite of repeated examinations and very careful manipulation, the anterior uterine wall ruptured just above the cervix. An immediate laparotomy saved the patient's life. The author urges caution in attempting to dilate the cervix at any time and tries to account for the accident in his case by assuming that the uterine wall was weakened by the placenta praevia or that there was a naturally weak spot in the muscle or in the peritoneum over that area.

Perforation of an Ovarian Endometrioma Into Vagina.—Hermstein reports a case in which a large ovarian tumor obstructed the right tube; it was firmly adherent to the uterine wall and the large intestine; the left tube also contained a smaller cystic tumor. Both tubes were filled with a thick brown liquid which did not contain any pus. It was not a malignant tumor of the ovary but a typical endometrioma, which the author terms adenofibrosis interna and externa. Perforations by such tumors have been reported previously. They were always caused by infiltrations of retrocervical adenofibrous swellings, which differ greatly from endometrioma of the ovary and the perimetrium. In the present case, however, the retrocervical region as well as the Douglas pouch were free, so that the tumor must have originated in endometrial islands in the ovary. The tumors and the right tube were removed and the patient recovered promptly.

Myomectomy in Pregnant Women.—Liebmann quotes several authors who state that enucleation of uterine myomas in pregnant women is frequently followed by abortion. He reports several cases in which the myoma was shelled out; the patients recovered and birth was normal.

Simultaneous Bilateral Tubal Pregnancy.—Blagodarow reports one of these rare cases, which he believes is the thirty-second case recorded. The patient, aged 38, married twenty-two years, had had six normal labors, the last ten years before. As she suffered from pains in the abdomen and a large swelling was palpable, laparotomy was performed. The author describes the hematoma he found, the enlarged tubes and the degenerated ovaries, which were removed. Macroscopic investigation revealed an ovum in the ampulla of each oviduct. Evidently a rupture of each ovisac was followed by hemorrhage into the tubes.

53: 193-256 (Jan. 26) 1929

*Causes of Pruritus Vulvae. A. Labhardt.—p. 197.
Demonstration of Bacteria in Mother's Blood Immediately After Normal and Afebrile Birth. E. Kulka.—p. 202.
*Toxemic Icterus Gravis in Pregnancy. E. Rabau.—p. 205.
*Thyroid Treatment of Edema of Pregnancy and Prevention of Puerperal Eclampsia. E. Bárczi.—p. 209.
*Mertz's Precipitation Test for Diagnosis of Pregnancy. W. Schmidt.—p. 214.
Point of View of German Physicians on Artificial Abortion. A. Niedermeyer.—p. 216.
New Instrument for Decapitation of Fetus, Kézmárszky's Ecraseur. S. Sztehlo.—p. 218.
Improved Uterine Catheter for Insufflation of Tubes. G. Živatoff.—p. 226.

Causes of Pruritus Vulvae.—Labhardt recognizes three causes for this disease: (1) symptomatic pruritus in local disturbances of the vulva (vulvitis, maceration by leukorrhea) or in general disease (diabetes, cholemia); (2) ovariogenic pruritus with leukoplakia, and (3) neurogenic and psychogenic pruritus. Contrary to the opinion of some authors, Labhardt believes that the itching is a consequence of leukoplakia, which often appears alone. Among twenty-seven women observed by him, eighteen were in the climacteric; the remaining nine were hypomenorrheic or oligomenorrheic; only three were normal. Thus it is evident that ovarian hypofunction is closely related to leukoplakia. Among the twenty-seven patients, ten had diabetes.

Toxemic Icterus Gravis in Pregnancy.—Rabau reports a typical case of jaundice in a pregnant woman whose general condition was poor. Delivery was followed by early disappearance of the jaundice.

Thyroid Treatment of Edema of Pregnancy and Prevention of Puerperal Eclampsia.—On the basis of the well known fact that normally the thyroid enlarges during pregnancy, Bárczi concludes that the edema of pregnancy is due to thyroid hypofunction. He gave thyroid preparations and had good results in twenty cases. The fact that not one of the patients had eclampsia leads the author to conclude that the thyroid extract not only combats edema but also prevents puerperal eclampsia.

Mertz's Precipitation Test for Diagnosis of Pregnancy.—Schmidt used Mertz's test in 100 pregnant women. Ninety-two gave a positive reaction. The author states that this reaction is especially effective in early pregnancy and is less reliable later. It is recommended on account of its simplicity.

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73: 625-808 (Feb. 9) 1929

*Bronchostenosis in Children. C. E. Benjamins.—p. 628.
*Experimental and Clinical Catatonia. H. de Jong.—p. 640.
Typhoidal Form of Acute Articular Rheumatism. P. H. Kramer.—p. 648.
*The "Individuality Theory" of Mutation of Bacteria. J. J. van Loghem.—p. 655.

Bronchostenosis in Children.—Benjamins brings out that bronchostenosis caused by swelling of lymph nodes adjacent to bronchi may simulate completely the clinical picture caused by the presence of a foreign body: coughing with attacks of oppression, and all gradations of stenosis, with atelectasis and mitral stenosis. He states that, with a sudden onset of symptoms, in the absence of signs of pulmonary tuberculosis, the differential diagnosis is not difficult. Bronchoscopic examination is indicated in all such cases.

Experimental and Clinical Catatonia.—From his three series of experiments, de Jong found that a mixture of hydrochloric acid and bulbocapnine (from 20 to 40 mg. per kilogram of body weight), injected into cats, provokes a condition that corresponds to the symptoms of catatonia in man, as described by Kahlbaum in 1874. Whether the symptoms thus produced correspond likewise to the catatonic manifestations that occur in the course of uremia, epilepsy, encephalitis, paresis, brain tumor, and even meningitis is a point that requires further investigation. The agreements, noted by the author, between clinical and experimental catatonia, concerned the following conditions: cataleptoid state, stretching, passivity, negativism, defensive attitude of the muscles in passive motions, flexed attitudes, flow of saliva, tremors, result of chronaxia determination, result of electromyographic test, and short periods of fear and of exaltation.

The "Individuality Theory" of the Mutation of Bacteria.—Van Loghem conceives of changes in the character of bacteria as being due to normal and abnormal stimuli from the external world. Changes in individuality may be distinguished as adaptive changes (reaction to normal stimuli), and as retrogressive changes (disturbed or lost function, as reaction to abnormal stimuli), which may be further distinguished as atrophy and degeneration. Van Loghem does not, however, hold the view that hereditary processes may not be taken into account in explanation of the changes that bacteria undergo.

Hospitalstidende, Copenhagen

71: 1341-1366 (Dec. 13) 1928

*Summary of Experiences with Tar Cancer and with Cancer in Scars. F. Bang.—p. 1341.
Flat Vertebra (Calvé). H. J. Panner.—p. 1359.

Summary of Experiences with Tar Cancer and with Cancer in Scars.—Bang considers the relation between the cell and its canceration. He designates the development that a normal cell undergoes to acquire the characteristics of a malignant cell as "increase in virulence," a cell being virulent, i. e., malignant, when by division it becomes able to invade the surrounding tissue. The more often the cell divides, the sooner it attains this ability. As the tissue offers a certain resistance to invasion, canceration depends on (1) sufficient stimulation to cell division and (2) local weakening of the tissue to be invaded. If the resistance is lowered or the half virulent cells are stimulated still further to division, "latent cancer" appears. Age, intercurrent disorders, nervous influences, continued influence of the cancerigenic agent, possibly endogenous influences, are considered as weakening factors, and influences of widely different kinds, including mechanical influences, as irritants to division. Certain local pathologic conditions must play a part in the development of cancer. The life time of the normal cell and the number of divisions which the cell must undergo before becoming malignant are believed to vary with the kind of animal. The local and general predisposition of the individual to cancer then depends on the sum of these and other similar factors. The applicability of these views on the pathogenesis of cancer in explanation of hitherto unexplained phenomena in the cancer theory, such as "acute and latent cancer," carcinosarcomas, and the action of roentgen rays and of radium in both causing and curing cancer, is regarded as a criterion of the tenability of the theory. The differences in the various influences on the tissue which result in the same pathologic process are reconciled by classifying them as influences which (1) stimulate to division and (2) break down the resistance of the cells.

Hygiea, Stockholm

91: 1-32 (Jan. 15) 1929

*Simultaneous Extra-Uterine and Intra-Uterine Pregnancies. E. Thulin.—p. 1.
Blood Transfusion in Hemorrhagic Diathesis in the New-Born. H. Marcus.—p. 10.

Simultaneous Extra-Uterine and Intra-Uterine Pregnancies.—In Thulin's first case of coexistent pregnancies, evidently begun at the same time, in a septipara, aged 39, the extra-uterine pregnancy was interrupted in the second month by tubal rupture. The intra-uterine pregnancy was not suspected on excision of the tube. After two months hemorrhage began, with probable death at that time of the fetus, followed by so-called missed abortion. On curettage a macerated fetus, 9 cm. long, was removed. In the second instance in a secundipara, aged 27, also occurring in the second month, tenderness in the lower part of the abdomen appeared suddenly. The uterus was soft and enlarged. The diagnosis was probable intra-uterine pregnancy with torsion of the left adnexa or, more likely, extra-uterine pregnancy. Operation revealed a bulging of the medial portion of the left tube extending to the corresponding horn of the uterus. The tube was extirpated with broad excision of the uterine horn. Microscopic evidence of pregnancy was found in the tube. One month later the expulsion of a fetus 13 cm. long occurred. Curettage was performed because of profuse bleeding.